



DEPARTMENT OF THE ARMY
BASE REALIGNMENT AND CLOSURE
ATLANTA FIELD OFFICE
BRAC ENVIRONMENTAL COORDINATOR
HAMILTON ARMY AIRFIELD
1 BURMA ROAD
NOVATO, CALIFORNIA 94949



November 3, 2004

DAIM-BO-A-HA

Subject: Forwarding the draft final *Coastal Salt Marsh Remedial Action Work Plan*; Hamilton Army Airfield; Novato, CA.

Ms. Naomi Feger
Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Dear Ms. Feger,

The Army is pleased to provide the draft final *Coastal Salt Marsh Remedial Action Work Plan*; Hamilton Army Airfield; Novato, CA for your review.

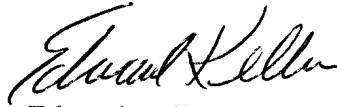
This document is submitted in accordance with Board Order No. R2-2003-0076 Site Cleanup Requirements (SCR) – Hamilton Army Airfield. This submittal describes design details of remedial measures and soil management, as required by SCR Task 12, for remedial actions taking place in the Coastal Salt Marsh (CSM). All actions in the CSM are scheduled to complete by February 1, 2005 and soil disposal will complete by September 1, 2005. A more detailed schedule of activities will be developed by the remediation contractor.

As you are aware, it is planned to use data from the current underway sampling event to help define the excavation boundaries. Excavation boundaries will be determined during a meeting between the Army, RWQCB, and USFWS scheduled for November 9, 2004. Figures of excavation boundaries will be submitted subsequent to the November 9th meeting and at least 10 working days prior to the requested comment date.

This document is being submitted to the RWQCB in accordance with SCR provision C8. It is also being distributed in accordance with SCR provision C9 for information.

I request your comments by December 3, 2004. If you have any questions, please contact me at (415) 883-6386.

Sincerely,

A handwritten signature in black ink, appearing to read "Edward Keller". The signature is fluid and cursive, with a large initial "E" and a long, sweeping underline.

Edward Keller, P.E.
BRAC Environmental Coordinator
Hamilton Army Airfield

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Hamilton Army Airfield, Novato, CA 94949
November 2004

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**DRAFT FINAL WORK PLAN
COASTAL SALT MARSH**



**REMEDIAL ACTION
FOR
HAMILTON ARMY AIRFIELD
NOVATO, CALIFORNIA**

November 3, 2004

**Prepared by:
SACRAMENTO USACE
Environmental Engineering Branch
1325 J Street
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**U. S. Army Corps
of Engineers**
Sacramento District



WORK PLAN COASTAL SALT MARSH REMEDIAL ACTION

**FOR
HAMILTON ARMY AIRFIELD
NOVATO, CALIFORNIA**

**Draft Final
3 November 2004**

**Prepared by:
U.S. Army Corps of Engineers
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Environmental Engineering Branch**

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Soil Management Plan

LIST OF ACRONYMS

BMP	Best Management Practices
BRAC	Base Realignment and Closure Program
CSM	Coastal Salt Marsh
DTSC	Department of Toxic Substances Control
4,4'-DDD	4,4'-Dichlorodiphenyldichloroethane
4,4'-DDE	4,4'-Dichlorodiphenyldichloroethylene
4,4'-DDT	4,4'-Dichlorodiphenyltrichloroethane
DoD	Department of Defense
DQO	Data Quality Objectives
GPS	Global Positioning System
HAAF	Hamilton Army Airfield
HDPE	High-Density Polyethylene
HWRP	Hamilton Wetlands Restoration Program
HODD	Historic Outfall Drainage Ditch
NPDES	National Pollution Discharge Elimination System
ODD	Outfall Drainage Ditch
PCB	Polychlorinated Biphenyls
PDD	Perimeter Drainage Ditch
PPE	Personal Protective Equipment
ROD/RAP	Record Of Decision/Remedial Action Plan
RWQCB	Regional Water Quality Control Board
SAP	Sampling and Analysis Plan
SCR	Soil Cleanup Requirement
SHSP	Site Health and Safety Plan
SMP	Soil Management Plan
SOP	Standard Operating Procedure
SW3P	Storm Water Pollution Prevention Plan
SVOC	Semi-volatile Organic Compound
TPH	Total Petroleum Hydrocarbon
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

1.0 INTRODUCTION

The Coastal Salt Marsh (CSM) at the former Hamilton Army Airfield (HAAF) requires remediation to address elevated levels of contaminants present in soil. The base was closed under the Army's base realignment and closure BRAC program in 1994. Past military operations involved use of fuel tanks; fuel lines; transformers; storm drains; sewer pipelines; a sewage treatment facility; revetment areas; drainage ditches; a boat dock; debris disposal areas; airplane equipment cleaning areas; repair and maintenance areas; and two burn pits. Associated contaminants included total petroleum hydrocarbons, metals, dioxins/furans, volatile organic compounds, semi-volatile organic compounds, polychlorinated biphenyls, and pesticides/herbicides.

1.1 OBJECTIVE

Remove contaminated soil from the CSM. The activities described herein will be performed to advance the environmental closure in accordance with the provisions of the Record Of Decision/Remedial Action Plan (ROD/RAP) for HAAF. These activities are specific to environmental and ecological interests and are designed to achieve Alternative 2 – excavation and off-site disposal. The objective is to remove soils with certain contamination levels resulting from former (Department of Defense) DoD activities. This work plan presents the project scope, regulatory authorities, project objectives, and remediation work.

1.2 SCOPE OF WORK

This Work Plan describes the construction related activities required to meet the objective stated above and as defined in the ROD/RAP. The ROD/RAP was written by and agreed to among the Army, Department of Toxic Substances Control (DTSC), and Regional Water Quality Control Board (RWQCB) in 2003.

The site-specific construction activities are detailed in Section 2.0. Locations and details of the construction activities are shown on Figures 2-1 through 2-9. The schedule is discussed in Section 4.2.

The goals for each of the outboard sites in the Coastal Salt Marsh at HAAF are summarized below:

Boat Dock Site - Excavate soil containing metals with levels above the cleanup goals.

Area 14 Site - Excavate soil containing TPH with levels above cleanup goals.

Historic Outfall Drainage Ditch (HODD) - Excavate soil containing metals and total DDTs with levels above the cleanup goals.

East Levee Construction Debris Disposal Area - Excavate soil containing metals with levels above the cleanup goals.

East Levee Burn Pit Area - Excavate soil containing metals, TPH, total DDTs, PCBs, and dioxins with levels above the cleanup goals.

Outfall Drainage Ditch (ODD) - Excavate soil containing metals, TPH, pesticides, and PCBs with levels above the cleanup goals.

Former Sewage Treatment Plant Outfall - Excavate soil containing metals and pesticides with levels above the cleanup goals. Remove pipeline.

High Marsh Plain - Remove by excavation soil containing metals, TPH, pesticides, and PCBs with levels above the cleanup goals.

High Marsh Grid - Remove by excavation soil containing metals, TPH, pesticides, and PCBs with levels above the cleanup goals.

The general scope of work for each site includes:

- Site mobilization and preparation including delineating the excavation boundaries in the marsh, vegetation clearing, and utility location;
- Removal or relocation of utilities and/or permanent structures;
- Soil excavation and stockpiling;
- Potential-collection of confirmation samples during excavation, if new conditions are found which would require additional sampling;
- Collection of stockpile samples for waste characterization;
- Off-site disposal of excavated soils; and
- Site restoration including placement of backfill at some locations.

1.3 SITE BACKGROUND

Hamilton Army Airfield was constructed on reclaimed tidal wetlands by the U.S. Army Air Corps in 1932. The U.S. Air Force ended military operations at Hamilton in 1976, and the property was declared surplus by the Department of Defense (DoD). In 1976, the Army began using the runway and ancillary facilities and several other buildings for regular Army and Army Reserve operations. In 1984, the State of California claimed title to lands subject to tidal action, including portions of the coastal salt marsh directly adjacent to the levees that constitute the north and east boundaries of the BRAC property, North Antenna Field and the CSM. The base was declared surplus property under the Base Closure and Realignment Act of 1988.

1.4 REGULATORY AUTHORITIES

This work is being accomplished following CERCLA guidance and as specified in the ROD/RAP and the RWQCB's site cleanup requirements (SCRs). The San Francisco Bay Area Regional Water Quality Control Board shall administer primary regulatory oversight. The work plan and final report for all activities shall be provided to the RWQCB for review and comment.

1.5 CHEMICALS OF CONCERN

The chemicals of concern for this work include total petroleum hydrocarbons, metals, dioxins/furans, polychlorinated biphenyls, and pesticides/herbicides. Each defined CSM site includes one or more of these chemicals for removal.

2.0 DESCRIPTION OF WORK

This section describes the planned approach to the removal actions. The section consists of Ecological Protection Plan, Preconstruction Activities, Excavation Activities, and Soil Disposal.

2.1 ECOLOGICAL PROTECTION PLAN

The Army will implement minimization measures to protect the Salt Marsh Harvest Mouse, the California Clapper Rail and other fauna and flora from the effects of the remedial actions. The measures will be performed under the direct guidance of a registered biologist approved by the U.S. Fish and Wildlife Service (USFWS). The biologist will provide a brief report upon completion of the work at each site summarizing the field findings.

Minimization measures will include:

- 1) Biological monitoring conducted before and during all construction activities;
- 2) Access routes aligned to minimize disturbance of habitat areas;
- 3) A buffer area created around work areas and access roads;
- 4) Exclusion fences constructed around the work areas to prevent salt marsh harvest mice from entering the area. The exclusion fence would be maintained until all soil and sediment removal and restoration activities are completed. The fence would be inspected regularly by a qualified biologist and repaired immediately if any holes, gaps, or other problems are found;
- 5) A qualified biologist to conduct periodic personnel training. Personnel will be trained in recognition of sensitive species, guidelines to reduce impact to sensitive species, and reporting requirements; and
- 6) A barrier placed at the downstream end of the drainage ditch just outside the ditch excavation site to prevent backwater due to tidal influence and also to prevent fish from entering the excavation area.
- 7) Monitoring the site for natural revegetation. Natural revegetation is expected to take 2 to 4 years after sites are filled and graded to the surrounding elevation.

The ecological protection plan and intrusive construction activities will be completed under the guidelines set forth by USFWS (Section 7 consultation), Regulatory Branch of the U.S. Army Corps of Engineers (Clean Water Act Section 404 Permits for Dredge and Fill Material, State Lands Commission Access Agreement Letter, California Coastal Commission, National Marine Fisheries Service, Regional Water Quality Control Board, and pertinent local regulations.

2.2 PRECONSTRUCTION ACTIVITIES

2.2.1 MOBILIZATION AND PREPARATORY WORK

Personnel, equipment, materials, and temporary facilities necessary to execute the project will be mobilized as needed to HAAF. Receipt and inspection of equipment and material will be documented on daily project logs. The contractor will have a quality control program to assure errors and deficiencies are minimal.

2.2.2 LOCATION SURVEY

A licensed California land surveyor will survey the horizontal and vertical coordinates of the surface at select locations at each excavation site. The surveyor will use the appropriate surveying techniques and/or a global positioning system (GPS). The survey data will be presented in the Construction Completion Report.

2.2.3 WASTE MANAGEMENT

No preconstruction waste is anticipated, however, waste soil and decontamination water will be stored in Department of Transportation-approved 55-gallon drums. Decontamination water stored in drums will be placed on pallets underlain with a lined and bermed cell to contain any potential spills. The containers will be clearly labeled to indicate specific source, type of material, date of containerization, and project contact. Drums will be stored in a centrally located area on the site inboard of the levee to await disposal. Disposal of any hazardous waste soils and decontamination water will occur within 90 days of the date of generation.

Miscellaneous waste, such as polyethylene sheeting and general trash, will be stored in dumpsters or rolloff bins. This material will be disposed of as non-hazardous waste at a generator-approved landfill or off-site recycling facility.

Receiving facility required sampling will be conducted as necessary.

Decontamination water storage is to be segregated by site. The soil sample locations and the approximate volume of water in each drum are to be recorded in daily field logs or project logs.

2.3 EXCAVATION ACTIVITIES

The following sections describe the pre-excavation activities, excavation of CSM sites, stockpile management and site restoration.

2.3.1 PRE-EXCAVATION ACTIVITIES

Pre-excavation activities include obtaining required permits, mobilizing to the site, marking the planned excavation limits, establishing exclusion zones, inspecting for underground utilities, and clearing vegetation from the excavation area. The following sections describe the activities that will be performed in preparation for the excavation work.

2.3.1.1 Permitting and Notification

Permits required for the proposed activities will be obtained prior to the start of field work. The Contractor will provide notification to the Bay Area Air Quality Management District (Regulation 8, Rule 40) that contaminated soil will be excavated. Underground Services Alert will be contacted at least 48 hours prior to excavation activities related to excavation work in order to receive an authorization to proceed. The local Department of Occupational Safety and Health will be notified at least two weeks prior to commencing excavation activities.

This work requires a Storm Water Pollution Prevention Plan (SW3P) under a National Pollution Discharge Elimination System (NPDES) storm water permit since the area of impact exceeds one acre. The Army BRAC Office has submitted a NPDES Notice Of Intent (NOI) to the RWQCB to cover this activity. The Appendix A SW3P to this work plan addresses water management during the excavation activities at the CSM remedial action sites. An approved SW3P is required prior to commencement of work in the marsh.

The minimum storm water Best Management Practices (BMP) are included in the SW3P. The government will submit a Notice of Termination and the Annual Compliance Reports to the RWQCB.

2.3.1.2 Mobilization and Site Set-up

Personnel, equipment, materials, and temporary facilities necessary to execute the project will be mobilized as needed to HAAF. Receipt and inspection of equipment and material will be documented on daily project logs.

2.3.1.3 Temporary Facilities and Site Security

Decontamination and waste storage areas will be set up.

Site control requires the establishment of regulated areas and site security. Site controls will be established to protect the public from construction hazards (i.e., heavy equipment and open excavations). Traffic control devices, such as barricades, cones, delineators, and signage, will be employed as necessary to manage pedestrian and vehicular traffic. Truck traffic between work areas will be set up as one-way looped haul roads.

2.3.1.4 Marking Planned Excavation Limits

Planned excavation limits will be marked prior to the mobilization of the construction crew and equipment. The areas of excavation will be field-located using appropriate surveying techniques and/or GPS. The proposed excavation limits for the remedial action sites are shown on Figures 2-1 through 2-9. Survey activities will be recorded in the Field Activity Daily Log .

2.3.1.5 Identification of Underground Structures and Utilities

The location of utilities and other underground structures within and around the planned excavation areas will be determined.

2.3.1.6 Pickleweed Removal and Barrier Fence Installation

The removal of pickleweed and installation of a barrier fence at each of the sites shall be executed in accordance with Appendix B and per drawings 2-1 through 2-9.

2.3.1.7 Water Inflow Prevention

Inflow of water into excavations at each site will be controlled using the following measures:

- At each site, plan the field work based on tidal, weather, and existing site conditions;
- Make provisions as necessary, to temporarily dam the Outfall Drainage Ditch from both tidal inflow and storm water being pumped from the inboard Perimeter Drainage Ditch (PDD) during construction. The work will be coordinated with HAAF and the Novato Sanitary District; and
- Temporary berms may be placed around high marsh excavations to prevent tidal inflows.

2.3.2 **EXCAVATION**

Prior to excavation, the ground surface at the location of the planned excavation at each site will be cleared of vegetation, debris, asphalt, and concrete. The proposed dispositions of known utilities and structures within the excavations are discussed in Section 2.3.3.

The soil will be excavated using an excavator, backhoe, front-end loader, and/or vacuum truck based on the size and configuration of the excavation. The excavation areas, volumes, and depths are included in Table 2-1. Excavated soil will be transferred to lined stockpile cells. Final disposition of the soil will be based on laboratory sample analysis. During excavation activities, engineering controls such as water mist spray will be used for dust control as-needed. The sidewalls of the excavations will be sloped or benched as described in Section 2.3.4 to minimize sloughing and ensure personnel safety. Safety warning signs will be posted. Appendix C contains the Soil Management Plan (SMP), which describes the Army's implementation plan for removal of soils containing contamination.

The total estimated area and volume of the excavations for each site is as follows:

**Table 2-1: Estimated Area, Volume, and Depth of Excavations
for Each Coastal Salt Marsh Site**

Site	Planned Excavation			Ingress and Egress Area (ft ²)
	Estimated Area ¹ (ft ²)	Estimated Volume (cy)	Depth (ft)	
Boat Dock [Figure 2-1]	3058	227	2	
Area 14 [Figure 2-2]	900	1667	5	
Historic Outfall Drainage Ditch [Figure 2-3]	2515	264	1 to 3	
East Levee Construction Debris Disposal Area [Figure 2-4]	13,698	1776	3.5	
East Levee Burn Pit [Figure 2-4]	8505	1260	4	
Outfall Drainage Ditch [Figures 2-6 and 2-6B]	12,852	1266	3	
Former Sewage Treatment Plant Outfall [Figure 2-7]	3133	218	3	
High Marsh Plain [Figure 2-8]	86,477	6327	1-2.5	
High Marsh Grid [Figure 2-9]	67,801	7533	1-?	
TOTAL	198,939	24,000²	NA	

1 Dimensions may vary in accordance with findings of pre-design investigation sampling activities.

ft = feet

ft² = square feet

NA = Not Available

cy = cubic yards

2 20% excavation tolerance

Residual water will only be pumped from the excavation into the ODD or PDD if required for work to continue.

The excavation will continue at each site until the designed extent of the excavation is reached. In no case will critical structures be disturbed during excavation. Excavation will be conducted as close as possible to permanent structures while maintaining no less than a 1:1 slope. Personnel and equipment will not enter the excavation or within the zone delineated by a 1.5:1 slope without approval of the Site Safety and Health Officer. Critical structures include roads, pipelines, some utilities, buildings, and poles for overhead power and telephone lines.

2.3.3 DISPOSITION OF UTILITIES AND STRUCTURES

The existing dredge pipeline along the East Levee debris and burn pit area will be protected and preserved in its existing condition. In the vicinity of the excavation, the pipeline will be removed. After site restoration, the pipeline will be replaced according to original specifications and tested as required.

Approximately 450 feet of effluent pipe at the Former Sewage Treatment Plant site will be removed from the area of the excavation. The work crew will receive asbestos awareness training prior to removal of the pipe. The pipe will be removed in complete sections and will be transported to an on-site location. It will then be wrapped in plastic and loaded into bins for off-site disposal. If the pipe needs to be cut in smaller sections, work shall stop and a certified asbestos crew shall be brought in to complete the removal process.

At the boat dock site, wood decking may be removed to facilitate soil removal beneath the dock. Prior to removal, the access and work areas of the deck will be reinforced to support foot traffic and open areas will be barricaded with temporary railings.

If utilities or structures other than those discussed in this Work Plan are encountered during excavation work, HAAF representatives will be consulted to determine if the utility is currently in service or if future use is planned. In general, if a utility is in service or planned for service, it will be braced and protected or relocated during excavation and backfilling activities. If a utility is out of service, it may be removed, or abandoned, at the discretion of the Army.

2.3.4 SOIL STOCKPILE AREA MANAGEMENT

Containment cells will be constructed to segregate material by type and to prevent stormwater runoff from entering the stockpiles. As applicable, materials will remain stockpiled in containment cells until waste characterization is completed and the material is approved for disposal.

Each cell will be constructed from 20-mil high density polyethylene (HDPE) sheeting, or equivalent, placed over and within an area delineated by bermed soil from the borrow pit. Each cell will be large enough to hold 150 percent of the volume of soil and debris anticipated to be stored in that pile. If possible, the cell will be constructed in an area that allows for water within the cell to drain to a single location within the cell.

As necessary, a storage tank will be mobilized to each cell for transfer of water that is generated from the stockpiled soil. A pump will be used to transfer the water from the stockpile cell to the tank.

At the completion of daily excavation activities, the soil within the stockpile cells will be covered with a 10-mil HDPE, or equivalent, sheet. During and following excavation activities, the stockpile cells will be periodically inspected to ensure that the stockpile cells and covers are in good condition and to observe whether water has separated from the stockpile soil. Excess water that separates from the soil within the cells will be transferred to the storage tank, as necessary.

Berms will be used to control storm water runoff onto the containment cells. As required, diversion ditches or dikes will be used to control sediment migration. Installed erosion and sediment control measures will be maintained throughout the duration of the project.

Miscellaneous waste such as construction debris, polyethylene sheeting, and general trash will be stored in dumpsters or rolloff bins.

2.3.7 DECONTAMINATION AFTER REMEDIAL ACTION

A decontamination area for heavy equipment will be set up. The decontamination area will include a polypropylene lined, bermed cell with a sump for water collection. A water source and water-collection tank will be located near the decontamination area.

Heavy equipment, including backhoes, excavators, and front-end loaders, will be decontaminated prior to demobilizing off the site. The tires, or tracks, of equipment that have traveled on contaminated soil will be cleaned.

A small decontamination area will be set up prior to the start of any waste profile sampling event. Reusable sampling equipment that will come in direct contact with soil, including trowels and bowls, will be thoroughly decontaminated. Personnel decontamination areas may be established at work areas as required in the SHSP.

Wastes collected during decontamination activities will be properly disposed. At the end of each workday, wastes from decontamination activities will be stored in the designated storage areas until final disposal.

2.3.8 POST-EXCAVATION SURVEY

Survey data will be provided as part of the Construction Completion Report. A final survey will verify the limits of each excavation. Since excavations will be backfilled daily, excavation depths will be documented daily by the on-site construction representative.

2.3.9 SITE RESTORATION

The surface at most of the sites will be restored to conditions similar to pre-construction conditions as follows:

- The backfill soil will be obtained from an approved location;
- Once the borrow pit is selected and the boundaries flagged, the vegetation will be removed along with any topsoil that is not approved for use, and set aside;
- Excavators and off-road dump trucks will be used to deliver and place the backfill soil;
- Wooden or metal support mats may be required to support the construction equipment during backfill operations;
- It is not anticipated that grading and compaction equipment will be used for this operation as a result of the wetness of the existing soil and the backfill material;
- No concrete, asphalt, aggregate base, hydroseeding, re-vegetation, or fencing work will be performed;
- Power pole replacement or relocation will not be performed. Inactive power poles that interfere with the demolition/removal will be removed and disposed of;
- As-built documentation of excavations will be based on a survey to be performed by a licensed surveyor and a complete set of survey data will be provided as part of the as-built documentation in the construction completion report.

When field activities are completed, the decontamination areas will be removed, and the area will be restored as much as possible to the original conditions. Any waste generated during the project will be disposed of properly.

Boat Dock Site – The excavation will not be backfilled.

Area 14 Site – The excavation shall be backfilled and graded to the general contours of the existing site allowing tidal and rainwaters to drain in the same fashion as before disturbing the site.

Historic Outfall Drainage Ditch –The excavation will not be backfilled.

East Levee Construction Debris Disposal Area – The excavation will be backfilled and graded allowing tidal and rainwater to drain.

East Levee Burn Pit Area – The excavation will be backfilled and graded allowing tidal and rainwater to drain.

Former Sewage Treatment Plant Outfall – The excavation will not be backfilled.

Outfall Drainage Ditch –The excavation will not be backfilled.

High Marsh Plain– The excavation will be backfilled and graded to the general contours of the existing site allowing tidal and rainwaters to drain in the same fashion as before disturbing the site.

High Marsh Grid – The excavation will be graded to the general contours of the existing site allowing tidal and rain waters to drain in the same fashion as before disturbing the site.

2.3.10 WASTE MANAGEMENT, CHARACTERIZATION, AND DISPOSAL

2.3.10.1 Soil

Soil will be transported to and disposed at an off-site facility permitted to receive the material. Stockpiled soil from each site will be sampled for waste disposal characterization at the frequency required by the disposal facility. The samples will be analyzed for the analytes and parameters and by the methods required by the disposal facility. Copies of analytical test results will be provided to the disposal facility as required to obtain disposal acceptance. Analytical data from waste profile samples will be reviewed prior to completion of waste profiling and removal of the stockpiled soil from the site.

Bulk carriers will transport the soil off-site to the licensed disposal facility. The carriers will be owned and operated by a transporter that is licensed and permitted to transport the waste soil. The waste soil will be transported under bill-of-lading or Uniform Hazardous Waste Manifest, if required.

2.3.10.2 Liquids

Liquid wastes generated during the soil removal activities may include decontamination rinsate water and water pumped from soil stockpile cells. These liquids will be collected and stored in drums or portable tanks and transferred directly to a vacuum truck or trailer for transport to a disposal facility, or discharged in accordance with regulatory requirements.

Samples will be collected, as required by the disposal facility, and the water will be characterized for disposal. Previously obtained analytical results will be used to the extent possible in characterizing the wastes. Once acceptance has been received from the disposal facility and the generator, the water will be transported off-site for treatment/disposal under a non-hazardous waste transport form or manifest.

2.3.10.3 Debris and Miscellaneous Waste

Debris consisting of non-hazardous combustible and non-combustible wastes resulting from demolition and clearing and grubbing waste will be disposed of off-site according to applicable Federal, State, and local requirements.

Miscellaneous waste such as construction debris, polyethylene sheeting, and general trash, will be disposed of as non-hazardous waste at a generator-approved landfill or an off-site recycling facility.

2.3.10.4 Transite Pipe

Removed pipeline may be temporarily stored on site prior to off-site disposal. Transite materials will be disposed of off-site according to applicable Federal, State, and local requirements.

2.3.10.5 Concrete and Asphalt

Asphalt and concrete debris that is free of associated soils will be placed in the current concrete debris disposal area.

2.4 DUST CONTROL

Dust control will be implemented as needed during the field activities associated with the project. If needed, dust control during surface soil excavation, stockpiling, and backfilling will be achieved through application of water. Structures and land surfaces will be treated with water dispensed from a water truck or trailer or by water sprayed from a pressurized hose. The source of water will be the hydrant on the northwest side of Building 82. Uncovered stockpiles, excavation areas and backfill areas subject to dust control will be treated with water dispensed from a pressurized hose. The objectives associated with the application of water for dust control are to minimize any saturation, and to mitigate negative impacts to human health, and the environment. Water will be fogged or sprayed into the dust around the waste and waste surface in minimal volumes to provide dust suppression only. Water will not be introduced into the waste in volumes that exceed disposal facility acceptance criteria.

2.5 DEMOBILIZATION

Demobilization will consist of the decontamination and removal of heavy equipment, tools, and supplies; and evacuation of the temporary office space. Temporary fence, traffic control devices, signs, storage containers, and refuse containers will be removed from the site. Debris will be properly disposed and work areas will be cleaned and left in condition similar to or better than their condition before commencement of the project activities.

2.6 PHOTO DOCUMENTATION

Photographs will be taken to document the work activities at each site.

3.0 POST CONSTRUCTION DOCUMENTATION

A summary report will be prepared and submitted. Tables will supplement the as-built report, and will include documentation of removed and/or demolished features, analytical test results, waste manifests, disposal records, survey data, and soil quantities excavated. Materials, equipment and procedures used,

requests for information, and problems encountered will also be provided in the summary report. Photographs documenting work activities will be provided in an appendix.

4.0 PROJECT ORGANIZATION AND SCHEDULE

4.1 PROJECT ORGANIZATION

- 4.1.1 Project Manager - Mr. Raymond Zimny
- 4.1.2 Team Member – Technical Lead - Mr. James Lukasko.
- 4.1.3 Team Chemist - Ms. Kathleen Siebenmann
- 4.1.4 Database Manager – Chemistry Quality Control Manager (CQCM) - Mr. Carleton Fong
- 4.1.5 Contract Laboratory
Labs report to the Project Chemist or the CQCM and are responsible for implementing their quality management plan and providing analytical and related services in accordance with the approved project work plan and referenced procedures.
- 4.1.6 Program Safety and Health Officer - Ms. Donna Maxey
- 4.1.7 Contractor Quality Control System Manager - Mr. Thomas Purbaugh is the Cerrudo Services PM
- 4.1.9 BRAC Environmental Coordinator - Mr. Ed Keller

4.2 PROJECT SCHEDULE

A detailed project schedule has been prepared and will be updated once work begins. This schedule is provided as Figure 4-1.

Excavation activities will be performed during the period from November 2004 through January 31, 2005. These activities include the preparation, submittal, review, and approval of the project plans. Field activities will begin with mobilization in November 2004 and are scheduled to be completed by September 2005. Reporting is to be completed by April 2005.

5.0 REFERENCES

- Army (U.S. Department of the Army), DTSC (California State Department of Toxic Substances Control), RWQCB (California Regional Water Quality Control Board) 2003. *Main Airfield Parcel Record of Decision/Remedial Action Plan, Hamilton Army Airfield*, Public Comment Final, August 2003.
- Foster Wheeler Environmental Corporation, 2000. *Remedial Design Investigation Final Data Report, BRAC Property, Hamilton Army Airfield*, February 2000.
- IT Corporation, 1999. *Comprehensive Remedial Investigation Report, BRAC Property, Hamilton Army Airfield*, April 1999.

USACE, 2004. *Combined Final Report on Results of the Area-Wide DDT Site Investigation, Hamilton Army Airfield*, March 2004.

USACE 2004. *Work Plan, Miscellaneous Site Investigations, Hamilton Army Airfield*, Final, January 2004.

U.S. Fish and Wildlife Service Biological Opinion and amending letter, August 2003 and September 2003.

6.0 APPENDICES

APPENDIX A

Storm Water Pollution Prevention Plan

APPENDIX B

Pickleweed Removal and Barrier Fence Installation Plan

APPENDIX C

Soil Management Plan

FIGURES

APPENDIX A

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

Coastal Salt Marsh Remedial Action Work Plan Hamilton Army Airfield

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

Prepared for Compliance with the National Pollutant Discharge Elimination System
(NPDES) and California's General Permit for Storm Water Discharges
Associated with Construction Activity

PROJECT: Hamilton Army Airfield, Coastal Salt Marsh, Soil Remedial Action

LOCATION: Novato, CA

CONTRACT: _____

DATE CERTIFIED BY CONTRACTOR: _____

CONTRACTOR:

GOVERNMENT AGENCY:

US Army BRAC Office

1 Burma Road

Novato, CA 94949

PROJECT WDID NUMBER _____

DATE APPROVED BY USACE _____



**Prepared by US Army Corps of Engineers
Sacramento District
Environmental Engineering Branch**



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STORM WATER POLLUTION PREVENTION PLAN

1. OBJECTIVES

This Storm Water Pollution Prevention Plan (SWPPP) is intended to meet the California General Permit requirements for construction projects regulated under the National Pollutant Discharge Elimination System (NPDES) for Discharges of Storm Water Runoff associated with Construction Activity.

Provision 4 of the General Permit requires that this SWPPP must be prepared in accordance with the format described in Section A of the General Permit. The SWPPP must (a) identify all pollutant sources including sources of sediment that may affect the quality of storm water discharges; (b) identify non-storm water discharges; (c) identify and implement the Best Management Practices or BMPs during construction, (d) include an implementation time schedule, (e) include a maintenance schedule designed to reduce or eliminate pollutants after the construction is completed, and (f) include certification of the SWPPP.

Provision 15 of the General Permit requires that a monitoring program be implemented for sites that may impair water bodies by contributing pollutants that are not visible. This provision requires that a Sampling and Analysis Plan be implemented to monitor discharges from the general construction area. The responsibility for sampling is with the Government construction representatives during this contract. There is a storm water monitoring program in place that calls for samples to be taken at the Pump Station prior to discharge to the Bay. The contractor is responsible for being aware and knowledgeable of the sampling and informing the Government construction representative if a breach of the storm water pollution prevention measures has occurred and sampling is required.

For the purpose of this SWPPP, the prime construction contractor shall be designated as the “discharger” since the prime construction contractor has direct control to minimize any potential stormwater discharge during construction. The US Army shall be designated as the “government” in this SWPPP. The discharger (i.e. the prime construction contractor) shall designate a Primary SWPPP coordinator who has the direct authority and the primary responsibility to implement the requirements of this SWPPP. A Secondary SWPPP coordinator shall also be identified who will assume the SWPPP coordinator’s responsibilities in the event the Primary SWPPP coordinator is absent or not on-site. After the contract is awarded, the names of the Contractor’s Primary and Secondary SWPPP coordinators shall be identified in Section 13 of this SWPPP.

2. IMPLEMENTATION SCHEDULE

A Notice of Intent (NOI) to obtain coverage under the General Permit has been obtained by the government and the Receipt of the NOI and the Waste Discharge ID (WDID) number is 221C326821. The General Permit and the contract require that this SWPPP must be completed and certified.

The contract specification (Section 01356A) specifies that this SWPPP shall be reviewed by the discharger (prime construction contractor) for applicability. After verifying applicability, the following must be completed by the discharger prior to any soil disturbing activity:

- (1) Completion of project, location, contract, contractor on the front cover.
- (2) Identification of Imported Material and BMPs in Sections 5E and 5F.
- (3) Coordination of Sampling Analysis Plan discussed in Sections 5G.
- (4) Identification of the Primary and Secondary SWPPP coordinators and their Stormwater Pollution Prevention training in Sections 12 and 13.
- (5) Attaching a construction schedule for BMP installation in Section 14.
- (6) SWPPP Certification in Section 16.
- (7) Obtaining Government approval in Section 16.

During construction, the discharger is responsible for recognizing any changes in the project, which may affect this SWPPP or increases the risk of Storm Water Pollution (such as a lack of a BMP to address a potential Storm Water Pollution risk that develops during actual construction). The discharger is required to implement a new BMP and amend this SWPPP in accordance with Section 4 of this SWPPP in order to eliminate or minimize the risk of stormwater pollution. The discharger is also required to complete the attached Site Inspection/Maintenance/Repair Form during construction as described in Section 11.

After construction, the NOI issued by the State of California requires the Army to conduct maintenance and periodic field inspections during a revegetation establishment period. The requirements of the General Permit shall apply until the end of this revegetation period. The annual fees to maintain coverage by the General Permit and submitting the Notice of Termination (NOT) are the responsibilities of the government. During this revegetation establishment period, the government is still responsible to maintain the stormwater pollution prevention requirements of the General Permit. If another contractor is responsible for revegetation, this SWPPP may be terminated by the government by a written memorandum after the vegetation contractor has certified a new SWPPP.

Prior to submitting a NOT at the end of the revegetation establishment period, the government is required to perform a final walk-through inspection to ensure no unpermitted stormwater discharge will occur. Section 7 provides the inspection standards. The government will ensure that all inspection and recording requirements in

Section 10 (post-construction stormwater management plan) have been met prior to submitting the NOT.

3. AVAILABILITY

The SWPPP shall be available at the construction site while the site is under construction during working hours, commencing with the initial construction activity and ending with the termination of coverage under the General Permit. The SWPPP shall be located at an accessible and known location in the on-site office. The original SWPPP should be secured while a copy may be posted for accessibility. The SWPPP must be readily accessible to any worker, public visitor, or inspector from the state or regional water quality control board during working hours, commencing with the initial construction activity and ending with termination of coverage under the General Permit. When the on-site office is closed, an emergency telephone number (24 hour) shall be clearly posted for situations other than those requiring 911. This emergency telephone number must give the caller access to the site superintendent and/or SWPPP coordinator.

This SWPPP should be made available to the public under Section 308(b) of the Clean Water Act.

In addition to this SWPPP and the General Permit, the discharger is required to maintain a daily field logbook and a three ring binder to file the completed inspection records described by Section 11. The daily field logbook and completed inspection records are normally maintained by the construction foreman or SWPPP coordinator and must be made available when requested.

The original SWPPP shall be available on site until a written memorandum is issued by the government to terminate the contractor's obligation to the SWPPP. The original SWPPP, Inspection Records and logbook shall then be delivered to the government for record keeping as part of the project completion report.

The contractor shall be aware that a visitor from the RWQCB, SWRCB, DWR, EPA and the Army has the right to inspect the site at any time and have immediate access to the SWPPP. The contractor shall brief all on-site employees on the location of the SWPPP, and who the primary and secondary SWPPP coordinators are. On-site employees shall be briefed to direct any visitor from any regulatory agency to the SWPPP coordinator. The SWPPP coordinator should notify the Army immediately that a visitor from a regulatory agency is on-site.

4. REQUIRED CHANGES

REQUIRED CHANGES PRIOR TO CONSTRUCTION: As specified by the contract specification (Section 01356A), the discharger shall review this Preliminary SWPPP to verify applicability and fill in any blank information needed to complete the SWPPP as identified previously in Section 2. The SWPPP must be certified by the discharger and then submitted to the government for approval. Government approval is required prior to any soil disturbing activities and is indicated by a signature and date in Section 16 of the SWPPP. The Waste Discharge ID number (WDID) will be completed by the government. The original SWPPP with the appropriate signatures shall be returned to the discharger for implementation and must meet the availability requirements per Section 3.

REQUIRED CHANGES DURING CONSTRUCTION: The discharger shall amend this SWPPP during construction whenever there is a change in construction or operations which may affect the potential discharge of pollutants to surface waters, ground waters, or a municipal separate storm sewer system (MS4). A BMP must be identified to address the potential discharge of each pollutant. The SWPPP is a 'living' document and therefore must be amended if site conditions vary from the initial planning/investigation, site storm water run-off violates any condition of the General Permit, or the general objective of reducing or eliminating pollutants in storm water discharges has not been achieved. If the RWQCB later determines that the discharger is in violation of the General Permit, the SWPPP shall be amended and implemented in a timely manner, but in no case more than 7 calendar days after notification by the RWQCB. All amendments shall be documented on a separate sheet with any necessary pen and ink changes to the original SWPPP that will refer to the amendments. All amendments shall be dated and signed by the discharger and the government. All amendments shall be directly attached to the original SWPPP. Government approval is required on all amendments except for schedule changes as described below.

A schedule to implement the erosion and sedimentation BMPs shall be generated by the discharger and attached to this SWPPP. Other BMPs that are specified by the contract shall be included in the schedule. The discharger may change this schedule to suit the actual construction condition if there is no increased risk of a stormwater pollution discharge. The contract specifies a requirement to install erosion controls on all disturbed soil within 14 days after completion of any such activity. Government approval is not required on any changes to the construction schedule if this 14-day requirement is being met. Government approval is required if the 14-day requirement cannot be met.

It is the contractor's responsibility to guarantee implementation of the SWPPP and compliance with all regulations, including the General Permit. The Corps of Engineers will verify that the contractor meets these obligations and reserves the right to inspect any and all contractor's activities.

5. SOURCE IDENTIFICATION

A. PROJECT INFORMATION

The Army Air Corps constructed Hamilton Army Airfield (HAAF) on 1,600 acres of reclaimed tidal mudflats in 1932. From 1932 to 1974 the base was used for aircraft staging, maintenance, and training.

Construction and Remediation activities at HAAF will involve soil impacted by petroleum hydrocarbons, metals, pesticides and PCBs.

Historical storm water monitoring has indicated that the storm water discharges at HAAF are not being impacted by significant quantities of pollutants from the various construction and remediation projects. A table showing historically monitored pollutants in storm water run-off can be found in Attachment 2. The contractor must be aware that the potential for pollution in storm water discharges increases dramatically if the erosion of contaminated soil is not managed properly.

Soil Remediation will involve soil excavation, movement, stockpiling, and offsite disposal.

Because construction site runoff may become polluted through contact with disturbed earth, site contamination, construction materials, waste materials, or vehicle leaks, this plan identifies potential pollution sources and prescribes site specific Best Management Practices (BMP's) to control pollution. The BMP's are designed to minimize pollution sources, reduce contact of storm water with on site pollutants, and/ or remove pollutants from that storm water before it leaves the site.

In addition to the BMP's, a storm water Sampling and Analysis Plan (SAP) will monitor the pollutants movement in storm water and ensure that the BMP's are operating satisfactorily. The Government will implement the SAP, but the contractor must inform the Government construction representative if a breach in the storm water pollution prevention measures occurs which has the potential of discharging sediments into nearby water bodies.

Because the excavation areas in the marsh plain are subject to tidal flooding on a daily basis standard SWPPP BMPs do not apply to those sites and they are not included in this SWPPP.

Attachment 3 provides Site Maps showing drainage patterns of the construction area. Figures 2-1 and 2-2 illustrate the drainage patterns. Those figures include color-coded areas where erosion and sedimentation controls are installed. In the case that black and white copies of the site maps are generated and the attached figures are not color coded, the contractor shall use color markers to locate the location of the erosion and sedimentation BMPs.

B. POLLUTANT SOURCE

The excavated soil is expected to contain pesticides, heavy metals, TPH, PCBs, and some Dioxins. It is expected that a majority of the soils will be classified as non-hazardous. However, some portion of the excavated soils will likely be classified as hazardous waste.

Based on the soil classification, the pollutant sources are contaminated storm water run-off, high turbidity water, soil erosion and sedimentation associated with a typical soil excavation and grading construction project. The potential for pollutants entering into nearby water bodies decreases dramatically if adequate storm water BMP's and a Sampling and Analysis Plan (SAP) are implemented. The drainage patterns are illustrated on the attached maps. Other construction related pollutant sources are identified as potential toxic or non-toxic sources, which are covered in subparagraphs 5D & 5E.

C. STORMWATER BMPs:

There are three major types of stormwater BMPs:

- (1) **Erosion control** BMPs as described in Section 6. These BMPs are also specified in the contract specification 01356A. Erosion control BMPs are designed to prevent the initial mobilization of soil particles during a potential rain event. (e.g. tackified straw, temporary vegetation, geotextile, etc)
- (2) **Sedimentation control** BMPs as described in Section 8. These BMPs are also specified in the contract specification 01356A. Sedimentation control BMPs are designed to trap soil particles in the water assuming that mobilization of soil particles have already occurred. (e.g. fabric rolls, silt fences, etc)
- (3) **Mandatory Housekeeping** BMPs as described in Section 14. This may require the need for a tire wash area, periodic cleaning of access roads to the site entrances and exits, additional protection of nearby storm drain inlets.

D. GENERAL SITE AND MATERIAL MANAGEMENT BMPs

In addition to the stormwater BMPs listed above, the discharger also has the primary responsibility to implement General Site and Material Management BMPs, which are related to material and equipment that are imported to the site.

These types of BMPs include: prevention of lubrication leaks from equipment, fuel, hydraulic fluid, and transmission fluid, properly storing imported material (both hazardous and non-hazardous) in a protected storage area with secondary containments, having a spill control plan, maintaining and inspecting portable toilets, and ensuring all waste containers or dumpsters have covers. The SF RWQCB Field Manual for Erosion

and Sedimentation Controls¹ has listed these types of BMPs in the “General Site and Material Management” section. The discharger is responsible for implementation of these BMPs and the on-site government field representative will inspect and note in the daily field report that the site is in compliance with adequate BMPs being deployed.

To document all material that is being imported to the site and identify the type of General Site and Material Management BMPs, the discharger must complete Section 5E and 5F. The discharge must also complete Section 9 to identify the Spill control plans, and any additional management practices utilized by the discharger.

E. TOXIC MATERIAL INFORMATION

Generally, the use of any toxic material must be in compliance with federal, state, and local requirements. Cal-OSHA (Title 8, Section 5194) and EM 385-1-1 (USACE Safety and Health Requirements) is invoked on this project and this requires the contractor to develop a Written Hazard Communication Program. This program requires a list of any hazardous substances, provide the material safety data sheets (MSDS), and train all employees on their proper use and disposal, including a spill control procedure and any required personal protection measures. The disposal of any toxic waste must be in compliance with federal, state, and local requirement.

The discharger shall provide a description of any toxic material (lubrication oils, cleaning solvents, fertilizer, pesticides, portable toilet chemicals, slurry wall material, etc) that will be transported to the construction site and may potentially be affected by a stormwater event. The discharger shall identify the specific BMPs associated with each toxic material on how to contain the toxic material during a stormwater event. Examples of BMPs are as follows: (1) a waterproof cover or storage area, (2) identification of employee responsibilities before, during, after use of any toxic material in a potential stormwater event situation, (3) using or storing toxic material in an area where there is a natural or man-made secondary containment system, (4) an inventory system for tracking purposes and (5) an inspection by the SWPPP coordinator to verify that the construction workers have secured all toxic material at the end of the shift.

If the number of toxic materials is relatively small, the daily field logbook may serve as an inventory system to record and track the amount of toxic material being used. If using the field logbook is too cumbersome to track the use of each toxic material, then the discharger may develop a separate tracking system to verify that all toxic material is secured prior to a stormwater event. The identification of any toxic material that may be affected by a stormwater event and the applicable BMPs shall be identified below:

¹ This 9” by 9” Field Manual illustrating 34 BMPs on 126 color pages is available at <http://www.swrcb.ca.gov/stormwtr/training.html> for \$25

Hazardous Material	Quantity	Location Utilized	Storage Location
Gasoline and diesel fuels; lubricating oils	< 2300 gallons	In heavy equipment fuel tanks and engines	None onsite
BMPs:			
1. Fueling and maintenance will be performed in a controlled area. 2. Equipment will be maintained in good condition (non-leaking) and inspected daily 3. Equipment will be cleaned in a single area where wash water will be prevented from entering the storm drain system 4. Equipment will be parked in one area, on an impervious surface, away from storm drain system.			

Hazardous Material	Quantity	Location Utilized	Storage Location
Portable toilet chemicals	Unknown	Portable toilets	None onsite
BMPs:			
1. Chemicals will be handled by an offsite toilet management company			

F. NON-TOXIC MATERIAL INFORMATION

The discharger shall also describe any non-toxic construction material (i.e. sand, concrete, aggregate, soil amendments, washing soap, and wastewater, etc) and any equipment that may potentially cause a discharge of material into a receiving water.

Describe all non-toxic construction material that will come in contact with potential stormwater during this project: None.

Describe all commercial equipment and commercial vehicles that will come in contact with potential stormwater during this project:

- | | |
|-------------------------------------|---------------------------|
| 1. Water truck, pump and fire hoses | 9. Sweeper |
| 2. Grader | 10. Backhoe |
| 3. Excavator | 11. Pick-up trucks |
| 4. Front end loader | 12. All terrain vehicle |
| 5. End dump trucks | 13. Vacuum truck |
| 6. Dozer | 14. Crane |
| 7. Off Road haul trucks | 15. Hand-operated cutters |
| 8. Grade-all | |

Describe all on-site equipment storage, cleaning and maintenance activities:

- Heavy equipment will be:
 - Fueled and maintained in a controlled area.

- Stored in a designated parking area
- Inspected daily for leaks
- Cleaned (sediment removed) prior to leaving the work site.
- Site housekeeping will be performed daily
- Heavy equipment tires will be washed or dry brushed prior to leaving the site
- Personnel vehicles will be parked on a concrete parking lot.

Describe the disposal procedure of all excess construction material and equipment: None.

Based on the above inventory, the discharger shall describe the BMPs on how to prevent stormwater pollution from any non-toxic material or associated activity. (examples of BMPs are ensuring certain material is stored in waterproof containers, minimizing the use of certain material exposed to potential rainfall, securing certain material for the evening or weekends, etc, having a map showing where the material and/or equipment is stored or utilized, inspecting all imported material, storing the material with secondary containments or away from drainage inlets). Note: See Section 14 for housekeeping BMPs to clean residential streets due to vehicles tracking mud from the construction site.

Equipment	BMPs
<ul style="list-style-type: none"> ▪ Water truck, pump and fire hoses ▪ Grader ▪ Excavator ▪ Front end loader ▪ End dump trucks ▪ Dozer ▪ Off Road haul trucks ▪ Grade-all ▪ Sweeper ▪ Backhoe ▪ Pick-up trucks ▪ All terrain vehicle ▪ Vacuum truck ▪ Crane ▪ Hand-operated cutters 	<ul style="list-style-type: none"> ▪ Heavy equipment will be: <ul style="list-style-type: none"> - Fueled and maintained in a controlled area - Stored in a designated impervious parking area - Inspected daily for leaks - Cleaned (sediment removed) prior to leaving the work site. - Tires will be washed or dry brushed prior to leaving the site. ▪ Sorbent material will be used on all spills and leaks and will be cleaned up immediately

- Site housekeeping will be performed daily
- Personnel vehicles will be parked on a concrete parking lot.

G. SAMPLING AND ANALYSIS PLAN

To help limit the potential of soil contaminants impacting storm water discharges a storm water Sampling and Analysis Plan (SAP) is in effect. The SAP involves sampling of storm water discharges from the site and analyzing those samples for potential pollutants.

In the past a Contractor has obtained storm water discharge samples as guided by the Hamilton Storm Water Pollution Prevention Plan (March 1999). This plan resides in the Hamilton field office Administrative Record. At the onset of the winter rain season after this project is completed a Contractor to be selected shall obtain water samples in a manner consistent with the SWPPP during or immediately after three representative storm events (or during the period of active storm runoff) from three locations on the Hamilton airfield. Each of the three locations will be sampled for metals (including Hg) (filtered and unfiltered), field measured TSS, pH, turbidity, and temperature, TPH extractable (quantitated for JP-4, diesel, and motor oil), TPH purgeable (quantitated for gasoline), PCBs and pesticides. The three locations are at the Graystone outfall onto the Main Airfield property, at the New Hamilton Partners outfall into the Perimeter Drainage Ditch and at the Building 39 pump station sump.

The sampling of storm water by others may occur while this contract is in service. While sampling and analysis are not covered under this contract, the discharger is required to be aware and knowledgeable of sampling at the site. In addition, if there is a failure of storm water pollution prevention measures and there is a potential of sediments entering nearby water bodies, the discharger must inform the Government Construction representative immediately so that sampling can be performed and steps be taken to remedy the situation.

Government or Contract workers under a modification or separate contract may do the required sampling. NOTE: Samples will be sent to a USACE certified and California State Certified environmental laboratory employing approved EPA SW846 methods for preparation and analysis. The Contractor shall obtain standard two-weeks (14 calendar days) turnaround analytical chemistry services, and will submit photocopies of all laboratory findings to the Corps Project Manager with courtesy copies and electronic data supplied to the BEC at the Hamilton Field office within 48 hours of receipt of analysis reports from the Laboratory. The Contractor shall obtain results to reporting limits consistent with the Plan. Any deviations from the SWPPP or referenced documents from the SWPPP shall be reviewed and approved by the Corps Project Manager.

6. EROSION CONTROL

Erosion control, also referred to as “soil stabilization”, is the most effective way to retain soil and sediment on the construction site. Erosion control is designed to prevent the initial mobilization of soil particles during a rain event. Since work may occur during the

rainy season (October 1 to March 31), erosion control measures will minimally consist of fiber wattles and preserving, to the extent possible, existing vegetation. A silt fence, in conjunction with the previous measures, is an alternative erosion and sediment control measure. Disturbed areas will be stabilized during construction by spraying water to control dust movement. If current conditions change due to site activities or a significant weather event, additional erosion control measures will be implemented by modification.

The discharger shall develop and attach a schedule to this SWPPP for implementation of the any erosion control measures undertaken by the discharger during the period of service of this contract. The schedule must meet the implementation requirements in the contract (Section 01356A). The schedule must include any information associated with the phased or segmented installation of erosion control measures to reflect their intended approach to overall project construction. Once project generated stockpiles have been removed and final site cleanup is completed, discharger's responsibility is finished. Site cleanup shall include removal of construction dirt / soil accumulated on hard surfaces (runway, taxiways, or roads) resulting from the contractor's construction activities.

7. STABILIZATION

The dischargers and the government shall verify the following stabilization requirements prior to submitting a Notice of Termination (NOT) at the end of the revegetation establishment period.

- All soil-disturbing activities by the discharger are completed. Once work is completed, the soil stockpiles must be contained and protected from erosion into other areas, and the SWPPP has been implemented, the discharger's responsibility ends.
- A uniform vegetative cover with 70 percent coverage has been established. The government is required to ensure that this requirement is met prior to sending the NOT.

If the 70 percent vegetative coverage has not been established by two years after construction, equivalent stabilization measures shall be employed as needed by the government. These equivalent stabilization measures include the use of BMPs such as blankets, reinforced channel liners, soil cement, fiber matrices, and geotextiles or other erosion resistant soil coverage or treatment.

If the background native vegetation covers less than 100 percent of the surface, such as arid areas, or the bottom of drainage ditches, the 70 percent coverage criteria can be adjusted using the following calculation example: If the native vegetation covers only 50 percent of the ground surface, as an example, then 50 percent times the original 70 percent criteria = 35 percent as the "adjusted criteria". The vegetation on the disturbed area must cover 35 percent for the total uniform surface coverage in order to meet the acceptance criteria. To permit use of the adjusted criteria, the government must take sufficient

photographs prior to the project to demonstrate that the native vegetation cover was less than 100 percent.

The above criteria shall be used during the walk-through or drive-through inspection described in section 2. If the stabilization inspection is acceptable, the government shall proceed to submit the Notice of Termination.

8. SEDIMENTATION CONTROL

Generally, sedimentation control BMPs shall consist of filtration and barrier devices along the downstream site perimeter and at all inlets to any storm water drain system.

Sedimentation control assumes that the initial mobilization of soil particles has occurred during a rain event and therefore these BMPs are necessary to trap and prevent an adverse discharge into a protect body of water.

Until permanent vegetation is established, temporary sedimentation control BMPs must be installed as follows:

Fiber wattles, rock filters, and silt fences are the recommended forms of sedimentation control for this project. Listed below (and on the attached site maps) are areas that require sedimentation controls. The contractor must add additional sedimentation controls as dictated by site conditions.

- (1) Down slope of site (construction, staging, and traffic areas).
- (2) At the foot of slopes if bank protection isn't immediately in place.
- (3) At the bottom of channels, perpendicular to flow.
- (4) Where needed in drainage paths to limit the potential for sediment flow to the site discharge points.

The discharger shall develop and attach a schedule to this SWPPP for implementation of the above sedimentation control measures. The schedule must meet the implementation requirements in the contract (Section 01356A). The schedule must also include any information associated with the phased or segmented installation of erosion control measures to reflect their intended approach to overall project construction.

9. NON-STORM WATER MANAGEMENT

The non-storm water discharge management and the BMPs are as follows:

- A. Accidental discharges. BMP: See Environmental Protection Plan²
- B. Discharge of construction worker wastewater BMP: See below.
- C. Employee's will review SWPPP prior to work; changes in SWPPP will be addressed during tailgate safety meetings.
- D. None.

² See Section 2.1, *Ecological Protection Plan* of the Work Plan

A. The Environmental Protection Plan[†] is required by contract specification Section 01430. Compliance to the Environmental Protection Plan is mandatory. The Environmental Protection Plan should include notification to the government and to any applicable regulatory agencies.

B. The discharge of construction worker wastewater (portable toilet water, office trailer wastewater, etc) must be in accordance with state laws and/or local ordinance

C. & D. are used to document any existing contractor's management plans used to manage material such as inventory control, employee awareness training plans, etc. If none exists, record N/A.

10. POST CONSTRUCTION STORM WATER MANAGEMENT

The original plans and specification provide drainage structure requirements that are designed to reduce any stormwater pollutants in a post-construction discharge.

The Post-Construction Storm Water Management shall consist of the government inspecting the site, and inspecting any erosion control BMPs.

The NOI issued by the State of California requires the Army to conduct maintenance and periodic field inspections during a revegetation establishment period. In addition to the vegetation inspection and record keeping, the Army shall also inspect for any potential risk for storm water pollution. All requirements of the General Permit are still mandatory during the revegetation establishment period.

11. MAINTENANCE, INSPECTION, AND REPAIR DURING CONSTRUCTION

The SWPPP coordinator shall be responsible to inspect and maintain all BMPs identified in this SWPPP to ensure its effectiveness. During the rainy season (Oct 1 to Mar 31), the inspection shall be conducted twice a week, on every Monday and every Friday beginning with the start of soil disturbing activities. This inspection also requires that the SWPPP coordinator check and document the current weather forecast and 5 day weather forecast. The inspection must be documented using the inspection form that is provided on the next page. By completing this inspection form at least twice a week, this will ensure that the weather is being monitored and that the BMPs are being maintained.

In addition to the twice a week inspection, an inspection by the Government onsite worker must be performed "before", "during", and "after" a major rainfall or storm event during daylight hours. A major rainfall event will normally develop sufficient runoff water that will discharge at least 50 gallons into a storm drain or a body of water. If the rainfall or storm event lasts more than 24 hours, then the inspections must also be performed every 24 hours "during" the rainfall or storm event. Two inspections in a single day is not

necessary if the “before”, “during” and “after” inspections also coincide with the normal Monday or Friday inspection. Safety is a high priority during a storm inspection and therefore inspection may be omitted if the inspection cannot be conducted safely. In this case, the inspection report should state: “No inspection due to unsafe inspection conditions: flooding, lightning, high wind, or engulfing mud” and a signature is required to document the unsafe condition. Inspection is only required once a week, every Friday, if construction is occurring during the non-rainy season.

The inspection must assess the BMP effectiveness and implement repairs or design changes as soon as possible depending on field conditions. If the BMPs are not effective, the BMPs must be upgraded to maintain compliance with the Permit and the SWPPP revised afterwards. The SWPPP coordinator shall ensure that equipment, materials, and workers are made available for rapid response to failures and emergencies that are necessary to prevent stormwater pollution. All completed inspection forms should be filed in a three ring binder and must be available when requested by the government or the RWQCB. After project completion, the three-ring binder and all completed inspection forms shall be submitted to the government for retention for a period of three years. Discharger shall provide a copy of the inspection forms as an appendix to the completion report.

In certain situations, the government may require by modification that the discharger conduct additional site inspections, submit reports, or perform sampling and analysis.

For a post construction inspection during the revegetation period, the words “Post-Construction” shall be entered in the block that is normally used to record “Monday or Friday”. The Post Construction Inspection shall be conducted at least once a month for the 1st year of the revegetation. In addition to the above inspection cycle, the Government shall also conduct an inspection “before”, “during” and “after” a major rain event in order to be in compliance with the General Permit during the post contraction period.

SITE INSPECTION/MAINTENANCE/REPAIR FORM - Required by SWPPP, Section 11
(reproduce this sheet and complete one sheet for each inspection. File the completed inspection record in a three ring binder.)

Date and Time of Inspection:
Weather Information during Inspection Date:
Weather Forecast (long range 5 day forecast):
If this is a rain event inspection, record “before”, “during”, or “after”. For a non-rain event maintenance inspection, record “Monday” or “Friday” Inspection.
BMP Inspection Results (narrative description of all BMPs, inspection results, and/or description of any inadequate BMPs. If necessary, write on other side of this form). This must include observations of erosion controls, sediment controls, toxic and non-toxic BMPs and non-storm water controls.
Inspection Results of relevant outfalls, discharge points into the river or downstream agricultural ditch from the Disposal Site. (narrative description of water being discharged, if any)
If applicable, Corrective Action Taken and being Taken (including BMP maintenance activities, repairs, and any necessary changes to SWPPP and implementation dates)
SWPPP Coordinator conducting Inspection (Name, Signature, and Date)

12. TRAINING

The SWPPP coordinators identified in Section 13 must be appropriately trained and the training shall be documented in this section. Training shall include, as a minimum, at least one formal training class and/or workshop (one day minimum) offered by the SWRCB, RWQCB, EPA, a professional organization, or an academic college or university, on Storm Water Pollution Prevention Measures. An awareness video (*Hold on to your dirt*) and a Field Manual by the SF RWQCB are available at the USACE Resident Office or Sacramento District technical library but this is considered “interim training” until the formal training is scheduled and completed by the contractor while the project is in progress.

Training classes and completion date attended by the Primary and secondary SWPPP coordinators:

- Viewed *Hold Onto Your Dirt* in September 2004.
- Reviewed: Guidelines for SWPPP Preparation and RWQCB Field Manual in September 2004.
- Have attended or will attend *Construction Site Planning and Management for Water Quality Protection* class before the end of 2004.

13. LIST OF ON-SITE SWPPP COORDINATOR(s)

The discharger shall designate a Primary SWPPP coordinator who has the authority and primary responsibility to implement the requirements of this SWPPP. A Secondary SWPPP coordinator shall also be identified who will assume the SWPPP coordinator’s responsibilities in the event the Primary SWPPP coordinator is not on-site. Either the Primary or Secondary SWPPP coordinator must be on-site during normal construction hours. The Primary and Secondary SWPPP coordinator shall have a cellular phone during normal working hours and have an evening or after hours phone number. The SWPPP coordinator shall be responsible to monitor the weather, including long range forecast and weekend forecast, and have the authority to mobilize construction workers to implement the BMPs identified in this SWPPP. The names of the Primary and Secondary SWPPP Coordinator shall be recorded here:

Primary SWPPP Coordinator Name: Manuel Escamilla
Primary SWPPP Coordinator Duty Cell Phone: (209) 815-4899
Primary SWPPP Coordinator After Hours Phone: (209) 815-4899

Secondary SWPPP Coordinator Name: Isaac Jacobs
Secondary SWPPP Coordinator Duty Cell Phone: (916) 226-3669
Secondary SWPPP Coordinator After Hours Phone: (916) 226-3669

The SWPPP coordinator shall be responsible to ensure full implementation of this SWPPP. This also includes briefing the government, the public or a RWQCB representative on any details of maintaining compliance with the General Permit and this SWPPP. If a regulatory agency inspector visits the site for compliance unannounced, the SWPPP coordinator must notify the government immediately and then cooperate with the inspector during the inspection. Any deficiencies must be corrected and reported to the government.

Other responsibilities shall include briefing any subcontractor, suppliers, vendors and visitors. The SWPPP coordinator shall ensure all subcontractors and all other personnel are aware of the requirements of this SWPPP and any work conducted by the subcontractor and all other personnel must not affect any of the BMP designed to eliminate Storm Water Pollution.

14. OTHER PLANS

Prior to SWPPP certification, an initial schedule for BMP implementation shall be generated by the discharger and attached to this SWPPP. This schedule shall include all scheduled training, schedule to install all erosion and sedimentation BMPs, mandatory housekeeping BMPs (described below), toxic and non-toxic material BMPs, erosion control BMPs, and completion of the maintenance/inspection/repair forms. An initial schedule must be attached to this SWPPP prior to government approval. The discharger is responsible to update this schedule to suit actual site conditions. A current, updated schedule must be made available when requested by the government or the RWQCB.

15. PUBLIC ACCESS

As described in Section 3, this SWPPP must be made available to the public under Section 308(b) of the Clean Water Act.

16. SWPPP CERTIFICATION

Discharger Certification of the Final SWPPP: A Main Construction Contractor's principle executive officer, responsible corporate officer, general partner or proprietor, or owner³ must also sign and certify the SWPPP. The on-site Primary SWPPP coordinator and Secondary SWPPP coordinator are also required to sign and certify the SWPPP.

Prior to Certification, all blanks shall be completed per Section 2 and a schedule for BMP implementation shall be generated by the discharger and attached to this SWPPP as Attachment 3. The discharger is also responsible to revise and update this SWPPP and the attached time schedule when changes occur.

"I certify under the penalty of law that this document and all attachments were verified to be applicable to this construction project to the best of my knowledge and that compliance with the SWPPP and the General Permit requirements are mandatory. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I also understand that I must give notice to the government, the RWQCB, and any local storm water management agency of any planned changes in the construction activity, which may result in noncompliance with the SWPPP or the General Permit requirements. I have also read, understand, and intend to comply with all provisions of the General Permit (Attachment 1) and I also understand that I am responsible for recognizing any changes in the project, which may affect this SWPPP and the requirements of the General Permit."

Certification Signature_____ Date_____

Print Name_____

Primary SWPPP Coord. Signature_____ Date_____

Print Name_____

Second. SWPPP Coord. Signature_____ Date_____

Print Name_____

After certification, the discharger shall submit this SWPPP for government review and approval below:

Government Approval _____ Date_____

Government Agency: Us Army Corps of Engineers

³ A duly authorized representative may also signed the certification statement provided the authorization is in writing by the principle executive officer, responsible corporate officer, general partner and proprietor, or owner and the written delegation is attached to this SWPPP.

17. ANNUAL CERTIFICATION AND NONCOMPLIANCE REPORTING

The government shall complete the annual certification requirement that all construction activities are in compliance with the requirements of this SWPPP and the General Permit. This Annual Certification is also based on the completed site inspection forms per Section 11 of this SWPPP and is normally completed by July 1 of each year.

Prior to the government completing the annual certification to the state board, the Primary SWPPP coordinator is required to provide a memorandum of record to the government that will support the annual certification. This memorandum shall read as follows:

“I certify under the penalty of law that this construction project is in compliance with the SWPPP and the General Permit requirements to the best of my knowledge. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

If there is a discovery of noncompliance and/or the annual certification statement or the memorandum of record cannot be completed due to non-compliance, a letter must be sent to the RWQCB with a copy to the government reporting the details of the non-compliance within 30 days upon discovery. This letter must also describe any corrective action measures taken, assessment of any potential damage or increased risk to stormwater pollution, actions necessary to achieve compliance and a time schedule indicating when compliance will be restored. The time schedule is subject to modification by the RWQCB.

18. ATTACHMENTS

ATTACHMENT 1 - GENERAL PERMIT*

(To be attached prior to award of contract)

ATTACHMENT 2 - LIST OF HISTORICALLY MONITORED POLLUTANTS

ATTACHMENT 3 - SITE MAPS. Figures showing Project Drainage Pattern and BMPs

(To be attached prior to award of contract)

ATTACHMENT 4 - CONTRACTOR’S SCHEDULE TO IMPLEMENT BMPs

(To be attached by the contractor prior to government approval)

ATTACHMENT 5 - COMPUTATION SHEET FOR DETERMINING RUNOFF
COEFFICIENTS

ATTACHMENT 6 - COMPUTATIONAL SHEET FOR DETERMINING RUN-ON
DISCHARGES

ATTACHMENT 1

GENERAL PERMIT *

* THE CURRENT GENERAL PERMIT may be downloaded from the State Water Resource Control Board homepage at www.swrcb.ca.gov and clicking “stormwater” and then clicking “construction program.”

ATTACHMENT 2

**LIST OF HISTORICALLY MONITORED
POLLUTANTS**

TABLE 1
LIST OF HISTORICALLY MONITORED POLLUTANTS

Analyte	Units
pH	pH Units
Turbidity	NTU
Gasoline	ug/L
JP-4	ug/L
Diesel	mg/L
Motor Oil	mg/L
Mercury (total)	ug/L
Antimony (total)	ug/L
Arsenic (total)	ug/L
Barium (total)	ug/L
Beryllium (total)	ug/L
Cadmium (total)	ug/L
Chromium (total)	ug/L
Cobalt (total)	ug/L
Copper (total)	ug/L
Lead (total)	ug/L
Molybdenum (total)	ug/L
Nickel (total)	ug/L
Selenium (total)	ug/L
Silver (total)	ug/L
Thallium (total)	ug/L
Vanadium (total)	ug/L
Zinc (total)	ug/L
Mercury (dissolved)	ug/L
Antimony (dissolved)	ug/L
Arsenic (dissolved)	ug/L
Barium (dissolved)	ug/L
Beryllium (dissolved)	ug/L
Cadmium (dissolved)	ug/L
Chromium (dissolved)	ug/L
Cobalt (dissolved)	ug/L
Copper (dissolved)	ug/L
Lead (dissolved)	ug/L
Molybdenum (dissolved)	ug/L
Nickel (dissolved)	ug/L
Selenium (dissolved)	ug/L
Silver (dissolved)	ug/L
Thallium (dissolved)	ug/L
Vanadium (dissolved)	ug/L
Zinc (dissolved)	ug/L
2-Methylnaphthalene	ug/L
Acenaphthene	ug/L
Acenaphthylene	ug/L
Anthracene	ug/L
Benzo(a)anthracene	ug/L
Benzo(b)fluoranthene	ug/L
Benzo(k)fluoranthene	ug/L
Benzo(g,h,i)perylene	ug/L
Benzo(a)pyrene	ug/L
Chrysene	ug/L
Dibenz(a,h)anthracene	ug/L
Fluoranthene	ug/L
Fluorene	ug/L
Indeno(1,2,3-cd)pyrene	ug/L
Naphthalene	ug/L
Phenanthrene	ug/L
Pyrene	ug/L
Total Suspended Solids	mg/L
Total Dissolved Solids	mg/L

Notes:

NTU Nephelometric Turbidity Units

NA Not Applicable

mg/L milligrams per liter

ug/L micrograms per liter

ATTACHMENT 3

Site Maps Showing Drainage Patterns and Storm Water Best Management Practices

Figure 2-1 and Figure 2-2



CSMSWPPP Figures
2-1 and 2-2.pdf

ATTACHMENT 4

CONTRACTOR'S SCHEDULE TO INSTALL BMPS

BMP Implementation Schedule

Soil Excavation / Coastal Salt Marsh / HAAF

Best Management Practice	Description	Location	When Implemented	Inspection Frequency	Maintenance and Repair
Scheduling	To the extent possible, work will be performed during the non-rainy season or on non-rainy days	Not applicable	Throughout project	Not applicable	Not applicable
Preservation of existing vegetation	Only vegetation that must be removed to allow for soil excavation and removal will be removed.	Throughout work sites	Whenever possible; within 14 days after construction activities have permanently or temporarily (for more than 21 days) ceased	<ul style="list-style-type: none"> ▪ Weekly ▪ Within 24 hours of storm that produces > 0.5" of rain 	Not applicable
Straw wattles	Straw wattles will be used to prevent sediment transport – see Figures 2-1 and 2-2 in Attachment 3 for locations	Straw wattles will be placed: <ul style="list-style-type: none"> ▪ Along the downhill perimeter edge of areas disturbed ▪ Along the top of the slope or bank of drainage ditches, channels, swales, etc that traverse disturbed areas ▪ Along the toe of cut and fill slopes of the construction areas ▪ Perpendicular to the flow in the bottom of drainage ditches, channels, swales, etc that traverse disturbed areas or carry runoff from disturbed areas ▪ Perpendicular to the flow in the bottom of new drainage ditches, 	Prior to soil excavation	<ul style="list-style-type: none"> ▪ Weekly ▪ Within 24 hours of storm that produces > 0.5 inches of rain ▪ Monthly after final stabilization 	<ul style="list-style-type: none"> ▪ Make sure there are no gaps ▪ Replace sections as need to maintain a solid barrier ▪ Repair or replace split, torn, unraveling or slumping wattles ▪ Remove built-up sediment,

BMP Implementation Schedule

Soil Excavation / Coastal Salt Marsh / HAAF

Best Management Practice	Description	Location	When Implemented	Inspection Frequency	Maintenance and Repair
		channels, and swales <ul style="list-style-type: none"> At the entrance to culverts that receive runoff from disturbed areas Surrounding soil stockpile areas 			as necessary
Silt fencing	Silt fences will be installed to minimize erosion and sediment runoff	See Figure 2-1 in Attachment 3 for location of silt fences	At mobilization	<ul style="list-style-type: none"> Weekly Within 24 hours of storm that produces > 0.5" of rain Monthly after final stabilization 	<ul style="list-style-type: none"> Repair undercut, spilt, torn, slumping or weathered fencing Remove built-up sediment, as necessary
Wind erosion control	Dust suppression will be provided by a water truck to minimize dust during excavation	Throughout soil removal work sites	During project whenever work activities may generate visible dust	Daily during use	<ul style="list-style-type: none"> Do not create standing water or runoff
Stabilized construction roadway	Haul roads will be stabilized to prevent erosion and for dust control	See Figure 2-1 in Attachment 3 for location of haul roads	During haul road construction and grading	<ul style="list-style-type: none"> Weekly Within 24 hours of storm that produces > 0.5" of 	<ul style="list-style-type: none"> Keep roadway ditches clear Apply additional aggregate as needed

BMP Implementation Schedule

Soil Excavation / Coastal Salt Marsh / HAAF

Best Management Practice	Description	Location	When Implemented	Inspection Frequency	Maintenance and Repair
				rain	needed <ul style="list-style-type: none"> Use dust suppression as needed
Exit tire clean	An area will be created where sediment can be removed from tires prior to exiting the work site and trapped for later removal	At Building 82	At mobilization; throughout project	<ul style="list-style-type: none"> Weekly Within 24 hours of storm that produces > 0.5" of rain 	<ul style="list-style-type: none"> Ensure that fiber rolls prevent wash water from entering storm drain system Remove accumulated sediment from sediment trap
Vehicle and equipment cleaning, fueling and maintenance	With the exception of the tire wash, cleaning, fueling and maintenance will be performed in a controlled area.	Offsite	At mobilization; throughout project	Not applicable	Not applicable
Material delivery and storage	Materials will be stored on and under waterproof barriers to prevent contact with stormwater	Office	Upon receipt of materials; throughout project	<ul style="list-style-type: none"> Weekly Within 24 hours of storm that produces > 0.5" of rain 	

Best Management Practice	Description	Location	When Implemented	Inspection Frequency	Maintenance and Repair
Stockpile / Contaminated soil management	<ul style="list-style-type: none"> ▪ Stockpiles will be located at least 50 feet from stormwater drainage system ▪ Stockpiles will be placed on geosynthetic material ▪ Large-diameter straw wattles and/or a 12" dirt rock berm will be placed around stockpiles to prevent runoff ▪ The stockpiles will be covered ▪ Dust suppression will be used to prevent wind erosion 	On runway see Figure 2-2 Attachment 3 for locations	During soil removal task	<ul style="list-style-type: none"> ▪ Weekly ▪ Within 24 hours of storm that produces > 0.5" of rain ▪ Monthly after final stabilization 	<ul style="list-style-type: none"> ▪ Repair or replace missing fiber rolls ▪ Repair or replace covers

BMP Implementation Schedule**Soil Excavation / Coastal Salt Marsh / HAAF**

Best Management Practice	Description	Location	When Implemented	Inspection Frequency	Maintenance and Repair
Solid waste management	<ul style="list-style-type: none">▪ Solid waste will be stored in an adequate number of:<ul style="list-style-type: none">- Covered waste cans- Covered debris boxes▪ Collection and removal will be scheduled weekly or more often , if necessary	At the office in Building 82	At mobilization	<ul style="list-style-type: none">▪ Weekly▪ Within 24 hours of storm that produces > 0.5" of rain	<ul style="list-style-type: none">▪ Spills will be cleaned up immediately

ATTACHMENT 5

COMPUTATION SHEET FOR DETERMINING RUNOFF COEFFICIENTS

Attachment 5

Computation Sheet for Determining Runoff Coefficients

$$\text{Total Site Area} = \underline{\quad 7.57 \text{ Acres} \quad} \quad (\text{A})$$

Existing Site Conditions

$$\text{Impervious Site Area}^1 = \underline{\quad 6.81 \text{ Acres} \quad} \quad (\text{B})$$

$$\text{Impervious Site Area Runoff Coefficient}^{2,4} = \underline{\quad 0.95 \quad} \quad (\text{C})$$

$$\text{Pervious Site Area}^3 = \underline{\quad 0.76 \text{ Acres} \quad} \quad (\text{D})$$

$$\text{Pervious Site Area Runoff Coefficient}^4 = \underline{\quad 0.40 \quad} \quad (\text{E})$$

$$\text{Existing Site Area Runoff Coefficient} \quad \frac{(B \times C) + (D \times E)}{(A)} = \underline{\quad 0.90 \quad} \quad (\text{F})$$

Proposed Site Conditions (after construction)

$$\text{Impervious Site Area}^1 = \underline{\quad 6.81 \text{ Acres} \quad} \quad (\text{G})$$

$$\text{Impervious Site Area Runoff Coefficient}^{2,4} = \underline{\quad 0.95 \quad} \quad (\text{H})$$

$$\text{Pervious Site Area}^3 = \underline{\quad 0.76 \text{ Acres} \quad} \quad (\text{I})$$

$$\text{Pervious Site Area Runoff Coefficient}^4 = \underline{\quad 0.40 \quad} \quad (\text{J})$$

$$\text{Proposed Site Area Runoff Coefficient} \quad \frac{(G \times H) + (I \times J)}{(A)} = \underline{\quad 0.90 \quad} \quad (\text{K})$$

1. Includes paved areas, areas covered by buildings, and other impervious surfaces.
2. Use 0.95 unless lower or higher runoff coefficient can be verified.
3. Includes areas of vegetation, most unpaved or uncovered soil surfaces, and other pervious areas.
4. Refer to local Hydrology Manual for typical C values.

ATTACHMENT 6

COMPUTATIONAL SHEET FOR DETERMINING RUN-ON DISCHARGES

Attachment 6

Computational Sheet for Determining Run-on Discharges

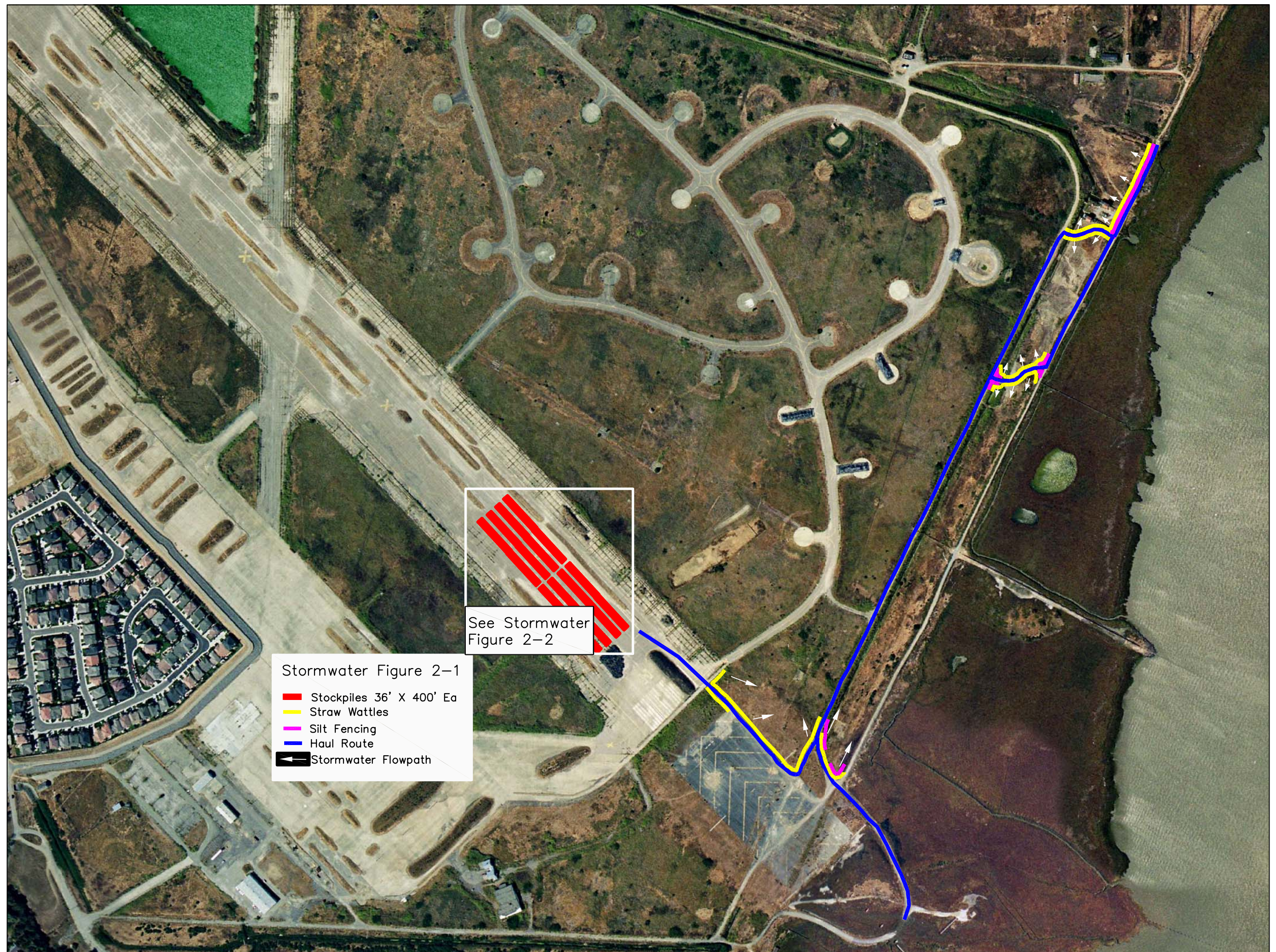
Existing Site Conditions

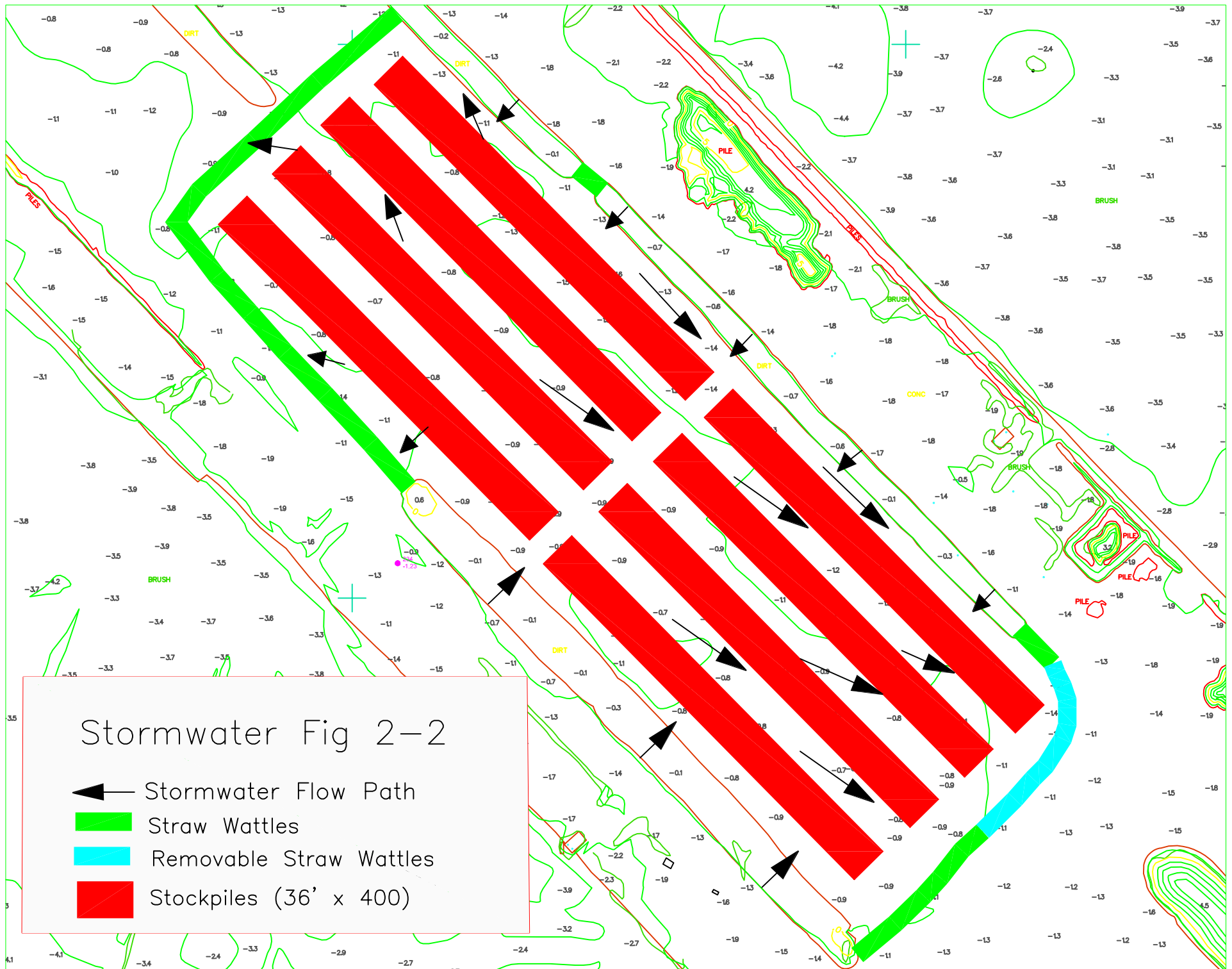
$$\text{Area Runoff Coefficient} = \underline{\hspace{2cm} 0.895 \hspace{2cm}} \quad (\text{A})$$

$$\text{Area Rainfall Intensity} = \underline{\hspace{2cm} 0.45 \text{ in/hr} \hspace{2cm}} \quad (\text{B})$$

$$\text{Drainage Area} = \underline{\hspace{2cm} 7.57 \text{ Acres} \hspace{2cm}} \quad (\text{C})$$

$$\text{Site Area Run-on Discharge} \quad (\text{A}) \times (\text{B}) \times (\text{C}) = \underline{\hspace{2cm} 3.07 \text{ ft}^3/\text{sec} \hspace{2cm}} \quad (\text{D})$$





APPENDIX B

PICKLEWEED REMOVAL AND BARRIER FENCE INSTALLATION PLAN

Coastal Salt Marsh Remedial Action Work Plan Hamilton Army Airfield

September 24, 2004

**PICKLEWEED REMOVAL AND BARRIER FENCE INSTALLATION PLAN
FOR COASTAL SALT MARSH REMEDIATION WORK SITES
AT HAMILTON ARMY AIRFIELD**

Introduction

In compliance with the Endangered Species Act, the United States Army BRAC program (Army) and the United States Army Corps of Engineers (Corps) initiated section 7 consultation with the U.S. Fish and Wildlife Service (Service) for potential effects to threatened and endangered species that may result from implementation of the remedial actions for the Hamilton Army Airfield Base Realignment and Closure Property, the North Antenna Field, and the Hamilton Wetland Restoration Project, Marin County, California. The Biological Opinion (BO) from the Service (Ref. # 1-1-03-F-0207), dated August 22, 2003 and amended on September 10, 2003, covers potential effects to the clapper rail, the salt marsh harvest mouse, and the Sacramento splittail. Since this BO was issued, the Sacramento splittail has been delisted. The BO identified a number of terms and conditions, which implement reasonable and prudent measures, and with which the Army and Corps must ensure compliance to be exempt from the "take" prohibitions of the Act. Terms and conditions item # 2b states that:

"A detailed plan shall be developed that describes how pickleweed vegetation would be removed and barrier fences would be constructed at environmental remediation or other work sites within the coastal salt marshes. The plan shall be provided to the Service for approval prior to implementation by the Army or Corps at the site."

The purpose of removing vegetation and constructing barrier fencing is to ensure that the salt marsh harvest mouse is excluded from the work area prior to bringing in any heavy equipment during the BRAC remedial actions in the coastal salt marsh. The plan described in this document has been developed by the Army to comply with terms and conditions # 2b of the BO.

Removal of Pickleweed

Pickleweed and associated vegetation will be removed or covered by mats in all areas of coastal salt marsh that are to be disturbed by remedial activities, including the remediation sites, access roads, and a 5-foot buffer around the remediation sites that will allow installation of a barrier fence without affecting the ability to access the site. Every effort will be made to minimize the affected area associated with the access roads. The contractor will maximize their use of existing roads and will provide a road width that will only accommodate one-way traffic between the edge of the undisturbed vegetation and the barrier fence fastened to the mat edge on either side of the road. The contractor

also will establish equipment and material staging areas outside of the coastal salt marsh and the associated 250-foot buffer zone.

The areas requiring vegetation removal will be initially delineated in the field with flagged stakes placed no more than 50 feet apart. For ease of visibility, the flagged stakes must be long enough to be driven in securely and to protrude at least 18 inches above the height of the surrounding vegetation. A Government biologist will be onsite to monitor the clearing crew activities and precede contractor entry into the CSM.

Once the work areas are delineated, the contractor may begin vegetation removal or knockdown activities. The first step in the removal process will be for the contractor to knockdown the vegetation within the delineated area by hand, without the use of any motorized equipment. This could be accomplished, for example, by using a length of pipe dragged along at ground level between two workers. At excavation sites this activity would be followed immediately by workers who would cut the vegetation off at ground level using hand tools and equipment. The cut vegetation would be immediately collected and removed from the coastal salt marsh. At access routes, mats would be placed directly upon the pickleweed. The placement of the mats will immediately follow the clearing of the effected area by a biologist.

To minimize the risk of the salt marsh harvest mouse returning to areas between steps in the removal process, the initial activity of knocking the vegetation down will not precede the cutting activity by an area of more than approximately 1000 ft² (equivalent to a square with 32 foot long sides). Similarly, the area cut should not precede the removal activity by an area of more than approximately 3000 ft² (equivalent to a square with 54 foot long sides). In addition, all excavation areas in which vegetation has been knocked down vegetation will be cut and the vegetation removed on the same day.

Construction of Barrier Fence

Once the vegetation has been completely removed from a remediation site and or mats installed on the associated access routes, barrier or exclusion fencing will be installed to prevent the salt marsh harvest mouse from accessing the disturbed sites and to contain workers within the designated excavation area to preserve habitat outside the work zones. Except for direct attachment to mats on access routes exclusion fencing will be placed on cleared ground at a distance of about 2 feet from the edge of the remaining vegetation. The fence should be buried approximately 6 inches below the ground surface and should stand at least 24 inches above ground. Wind, waves, and tidal action may damage the fencing. The contractor will be responsible for maintaining the fence in a functional manner for the duration of construction activities.

Silt fences have been used in the past as an effective barrier provided they are regularly maintained. Attachment A, from the Environmental Protection Agency, includes a description of silt fences and design requirements.

Attachment A

Source: http://cfpub2.epa.gov/npdes/stormwater/menuofbmps/site_30.cfm

Construction Site Storm Water Runoff Control

Silt Fence



Silt fences prevent the off site transport of sediment

Description

Silt fences are used as temporary perimeter controls around sites where there will be soil disturbance due to construction activities. They consist of a length of filter fabric stretched between anchoring posts spaced at regular intervals along the site perimeter. The filter fabric should be entrenched in the ground between the support posts. When installed correctly and inspected frequently, silt fences can be an effective barrier to sediment leaving the site in storm water runoff.

Applicability

Silt fences are generally applicable to construction sites with relatively small drainage areas. They are appropriate in areas where runoff will be occurring as low-level shallow flow, not exceeding 0.5 cfs. The drainage area for silt fences generally should not exceed 0.25 acre per 100-foot fence length. Slope length above the fence should not exceed 100 feet (NAHB, 1995).

Design Considerations

Material for silt fences should be a pervious sheet of synthetic fabric such as polypropylene, nylon, polyester, or polyethylene yarn, chosen based on minimum synthetic fabric requirements, as shown in Table 1.

Table 1. Minimum requirements for silt fence construction (Sources: USEPA, 1992; VDCR, 1995)

Physical Property	Requirements
Filtering Efficiency	75 - 85% (minimum): highly dependent on local conditions
Tensile Strength at 20% (maximum) Elongation	Standard Strength: 30 lbs/linear inch (minimum) Extra Strength: 50 lbs/linear inch (minimum)
Ultraviolet Radiation	90% (minimum)
Slurry Flow Rate	0.3 gal/ft ² /min (minimum)

If a standard strength fabric is used, it can be reinforced with wire mesh behind the filter fabric. This can increase the effective life of the fence. In any case, the maximum life expectancy for synthetic fabric silt fences is approximately 6 months, depending on the amount of rainfall and runoff for a given area. Burlap fences have a much shorter useful life span, usually only up to 2 months.

Stakes used to anchor the filter fabric should be either wooden or metal. Wooden stakes should be at least 5 feet long and have a minimum diameter of 2 inches if a hardwood such as oak is used. Softer woods such as pine should be at least 4 inches in diameter. When using metal post in place of wooden stakes, they should have a minimum weight of 1.00 to 1.33 lb/linear foot. If metal posts are used, attachment points are needed for fastening the filter fabric using wire ties. A silt fence should be erected in a continuous fashion from a single roll of fabric to eliminate unwanted gaps in the fence. If a continuous roll of fabric is not available, the fabric should overlap from both directions only at stakes or posts with a minimum overlap of 6 inches. A trench should be excavated to bury the bottom of the fabric fence at least 6 inches below the ground surface. This will help prevent gaps from forming near the ground surface that would render the fencing useless as a sediment barrier.

The height of the fence posts should be between 16 and 34 inches above the original ground surface. If standard strength fabric is used in combination with wire mesh, the posts should be spaced no more than 10 feet apart. If extra-strength fabric is used without wire mesh reinforcement, the support posts should be spaced no more than 6 feet apart (VDCR, 1995). The fence should be designed to withstand the runoff from a 10-year peak storm event, and once installed should remain in place until all areas up-slope have been permanently stabilized by vegetation or other means.

Limitations

Silt fences should not be installed along areas where rocks or other hard surfaces will prevent uniform anchoring of fence posts and entrenching of the filter fabric. This will greatly reduce the effectiveness of silt fencing and can create runoff channels leading off site. Silt fences are not suitable for areas where large amounts of concentrated runoff are likely. In addition, open areas where wind velocity is high may present a maintenance challenge, as high winds may accelerate deterioration of the filter fabric. Silt fences should not be installed across streams, ditches, or waterways (Smolen et al., 1988).

When the pores of the fence fabric become clogged with sediment, pools of water are likely to form on the uphill side of fence. Siting and design of the silt fence should account for this and care should be taken to avoid unnecessary diversion of storm water from these pools that might cause further erosion damage.

Maintenance Considerations

Silt fences should be inspected regularly and frequently as well as after each rainfall event to ensure that they are intact and that there are no gaps at the fence-ground interface or tears along the length of the fence. If gaps or tears are found, they should be repaired or the fabric should be replaced immediately. Accumulated sediments should be removed from the fence base when the sediment reaches one-third to one-half the height of the fence. Sediment removal should occur more frequently if accumulated sediment is creating noticeable strain on the fabric and there is the possibility of the fence failing from a sudden storm event. When the silt fence is removed, the accumulated sediment also should be removed.

Effectiveness

USEPA (1993) reports the following effectiveness ranges for silt fences constructed of filter fabric that are properly installed and well maintained: average total suspended solids removal of 70 percent, sand removal of 80 to 90 percent, silt-loam removal of 50 to 80 percent, and silt-clay-loam removal of 0 to 20 percent. Removal rates are highly dependent on local conditions and installation.

Cost Considerations

Installation costs for silt fences are approximately \$6.00 per linear foot (USEPA, 1992). SWRPC estimates unit costs between \$2.30 and \$4.50 per linear foot (SWRPC, 1991).

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APPENDIX C

SOIL MANAGEMENT PLAN

Coastal Salt Marsh Remedial Action Work Plan Hamilton Army Airfield

2004 Soil Management Plan

Hamilton Army Airfield Coastal Salt Marsh Sites



SOIL MANAGEMENT PLAN FOR HAMILTON ARMY AIRFIELD NOVATO, CALIFORNIA

October 4, 2004

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EXECUTIVE SUMMARY

This Soil Management Plan (SMP) describes Base Realignment and Closure (BRAC) work at Hamilton Army Airfield in the Coastal Salt Marsh (CSM) that is scheduled to begin in the fall of 2004.

The primary purpose of this work is to remove contaminated soils present in the CSM pursuant to the Record of Decision/Remedial Action Plan (ROD/RAP) and in accordance with the work plan for remedial action in the CSM.

The specific purpose of this SMP is to describe the Army's implementation plan for removal of soils containing contamination.

This SMP is intended to fulfill conditions contained in the ROD/RAP, the Biological Opinion issued by US Fish and Wildlife Service dated Aug 22, 2003 and the Site Cleanup Requirements (SCR) issued by the Regional Water Quality Control Board. This SMP is submitted in accordance with SCR Task 12 and provisions C8 and C9 of the Board Order No.R2-2003-0076.

1.0 PLAN OBJECTIVE

There are three main objectives to this plan.

1.1 This soil management plan (SMP) is intended to comply with those portions of the San Francisco Bay Regional Water Quality Control Board's Order R2-2003-0076 – Site Cleanup Requirements (SCR) issued for the Hamilton Army Airfield (HAAF) that are a BRAC responsibility. Task 12 of the SCR requires that the discharger, the Army, submit a SMP acceptable to the Executive Officer.

1.2 The second objective of this SMP is to describe the Army's plan for Alternative 2 sites of the Record of Decision / Remedial Action Plan (ROD/RAP) for excavation and disposal of certain contaminated soils.

1.3 The ROD/RAP for Hamilton requires that grading, excavation, and intrusive activities must be conducted pursuant to a plan approved by the State.

2.0 RELEVANT DOCUMENTS

- a. San Francisco Bay RWQCB Order R2-2003-0076 – Site Cleanup Requirements (SCR) for Hamilton, adopted on August 20, 2003.
- b. Record of Decision / Remedial Action Plan (ROD/RAP) Main Airfield Parcel at Hamilton dated August 2003.
- c. US Fish and Wildlife's Endangered Species Formal Consultation (Biological Opinion) dated August 22, 2003 and amended by a US Fish and Wildlife letter dated Sep 10, 2003.
- d. Foster Wheeler Environmental Corporation, 2000. Remedial Design Investigation Final Data Report, BRAC Property, Hamilton Army Airfield, February 2000.
- e. IT Corporation, 1999. Comprehensive Remedial Investigation Report, BRAC Property, Hamilton Army Airfield, April 1999.
- f. Coastal Salt Marsh December 2001/January 2002 Sampling Report, Hamilton Army Airfield, Novato, California, USACE and DoA BRAC Environmental Office, December 2002.
- g. Final Biological Testing Data Report BRAC Property, Hamilton Army Airfield, Novato California, IT Corporation, April 2000.

3.0 PROJECT DESCRIPTION

This project requires the excavation of certain soil from the CSM adjacent to the airfield and its offsite disposal. The general scope of work for each site includes:

- Collection of pre-excavation confirmation soil samples to delineate the extents of the excavations and to verify surface areas to be disturbed;

- Agreement through discussion with stake holders of excavation boundaries;
- Site mobilization and preparation including locating the excavation boundaries in the marsh, vegetation clearing, and utility location;
- Removal or relocation of utilities and/or permanent structures;
- Soil excavation;
- Placement of backfill at some locations.
- Collection of stockpile samples for waste characterization;
- Off-site disposal of excavated soils; and

The goal for each of the outboard sites in the CSM at HAAF is summarized below:

Boat Dock Site - Remove by excavation soil containing metals with levels above the cleanup goals.

Area 14 Site - Remove soil containing metals and TPH with levels above cleanup goals by excavation.

Historic Outfall Drainage Ditch (HODD) - Remove by excavation soil containing metals and total DDTs with levels above the cleanup goals.

East Levee Construction Debris Disposal Area - Remove by excavation soil containing metals with levels above the cleanup goals.

East Levee Burn Pit Area – Remove by excavation soil containing metals, TPH, PCBs, and dioxins with levels above the cleanup goals.

Outfall Drainage Ditch (ODD) - Remove by excavation soil containing metals, SVOCs, TPH, pesticides, and PCBs with levels above the cleanup goals.

Former Sewage Treatment Plant Outfall - Remove by excavation soil containing metals with levels above the cleanup goals. Remove Pipeline.

High Marsh Plain - Remove by excavation soil containing metals, SVOCs and PCBs with levels above the cleanup goals.

High Marsh Grid - Remove by excavation soil containing metals, TPH, SVOCs, total DDTs and PCBs with levels above the cleanup goals.

3.1 DEVELOPMENT OF SOIL MANAGEMENT PLAN REQUIREMENTS

Soil management plan requirements were developed from existing federal contaminated soils excavation, handling and disposal specifications.

3.2 REQUIREMENTS FOR SOILS CONTAINING CONTAMINATION

The Record of Decision / Remedial Action Plan (ROD/RAP) for the Hamilton site was issued in August 2003 by the US Army Base Realignment and Closure (BRAC) program, the California Department of Toxic Substance Control (DTSC) and the San Francisco Bay Regional Water Quality Control Board (RWQCB). The ROD/RAP presents the environmental response actions to be taken by the Army BRAC program and additional environmental assurances to be provided by the Army Civil Works Program. This Plan describes activities associated with remediation in the ROD/RAP that are to be carried out by the Army BRAC program.

The ROD/RAP section 3 describes in detail two environmental alternatives to address potential risks to human health and ecological receptors in the CSM wetland environment.

These alternatives are as follows:

1. No Further Action
2. Excavation and Offsite Disposal

The chosen alternative is Excavation and Offsite Disposal. Soil management actions to meet remedial action goals consist of soil removal where the contaminants of concern (COCs) for sites significantly exceed the action goals. The proposed CSM excavation sites are shown in the Work Plan (WP) figures. Soil will be transported to a stockpile area inboard on the runway, be allowed to dry then be transported to an appropriate offsite landfill. Samples collected during design before excavation determined the extent of the excavation geometry. Activities will be conducted in a manner that is sensitive to impacts on plants and animals.

3.3 SITE CLEANUP REQUIREMENTS

On August 20, 2003, the San Francisco Bay RWQCB adopted Order R2-2003-0076 (Site Cleanup Requirements) for the purpose of providing an enforcement mechanism for implementing the ROD/RAP. This Order requires that the dischargers, the US Army BRAC, submit a Soil Management Plan.

4.0 EXCAVATION PLAN

An excavation work plan has been prepared for the CSM project.

4.1 EXCAVATION PLAN DETAILS

Details are provided in the Work Plan, Coastal Salt Marsh, Remedial Action for Hamilton Army Airfield, Novato, California dated Sept 8, 2004 prepared by the USACE Sacramento District.

Wet soil excavated from the CSM will be stockpiled on the runway to dry. Care will be taken that water for dust control will not be introduced into the soil stockpiles unnecessarily. Dust control will be implemented as needed during the other field activities associated with the project. If needed, dust control during surface soil excavation, stockpiling, and backfilling will be achieved through application of water. Structures and land surfaces will be treated with water dispensed from a water truck or trailer or by water sprayed from a pressurized hose. The source of water will be the hydrant on the northwest side of Building 82. Uncovered stockpiles, excavation areas and backfill areas subject to dust control may be treated with water dispensed from a pressurized hose. The objectives associated with the application of water for dust control are to minimize any saturation, and to mitigate negative impacts to human health, and the environment. Water will be fogged or sprayed into the dust around the waste and waste surface in minimal volumes to provide dust suppression only.

Site (Figures are in the CSM WP)	Planned Excavation		
	Estimated Area (ft ²)	Volume (CY)	Depth (ft)
Boat Dock [Figure 2-1]	3058	227	2
Area 14 [Figure 2-2]	900	1667	5
Historic Outfall Drainage Ditch [Figure 2-3]	2515	264	1 to 3
East Levee Construction Debris Disposal Area [Figure 2-4]	13,698	1776	3.5
East Levee Burn Pit [Figure 2-5]	8505	1260	4
Outfall Drainage Ditch [Figures 2-6 and 2-6B]	12,852	1266	3
Former Sewage Treatment Plant Outfall [Figure 2-7]	3133	218	3
High Marsh Plain [Figure 2-8]	86,477	6327	1-2.5
High Marsh Grid [Figure 2-9]	67,801	7533	1-3
TOTAL	198,939	24,000*	NA

* 20% grading tolerance

4.2 EXCAVATION ACTIVITIES

The following sections describe the pre-construction activities, excavation of CSM sites, stockpile management and site restoration.

4.2.1 Pre-Construction Activities

Pre-construction activities include obtaining required permits, mobilizing to the site, marking the planned excavation limits, establishing exclusion zones, inspecting for underground utilities, and clearing vegetation from the excavation area. The following sections describe the activities that will be performed in preparation for the excavation work.

4.2.2 Pre-Construction Meeting

A pre-construction meeting will be held at HAAF prior to mobilization and prior to starting on-site preparation and construction activities. The procedures, specific activities, health and safety procedures, and proposed schedule for construction activities will be discussed.

4.2.3 Permitting and Notification

Permits required for the proposed activities will be obtained prior to the start of fieldwork. The Contractor will provide notification to the Bay Area Air Quality Management District (Regulation 8, Rule 40) that contaminated soil will be excavated. Underground Services Alert will be contacted at least 48 hours prior to excavation activities related to excavation work in order to receive an authorization to proceed. The local Department of Occupational Safety and Health will be notified at least two weeks prior to commencing excavation activities.

This work requires a Storm Water Pollution Prevention Plan (SWPPP) under a National Pollution Discharge Elimination System (NPDES) storm water permit since the area of onshore impact exceeds one acre. The Army BRAC Office has submitted a NPDES Notice Of Intent (NOI) to the SRWQCB to cover this activity. The Appendix A SWPPP to the CSM WP addresses storm water management during the excavation activities at the CSM stockpile sites. An approved SWPPP will be certified by the Contractor prior to commencement of work on the stockpiles.

The minimum storm water Best Management Practices (BMP) are included in the SWPPP. The government will submit a Notice of Termination and the Annual Compliance Reports to the RWQCB.

4.2.4 Mobilization and Site Set-up

Personnel, equipment, materials, and temporary facilities necessary to execute the project will be mobilized as needed to HAAF. Receipt and inspection of equipment and material will be documented on daily project logs.

4.2.5 Site Health and Safety

A SHSP will be provided under a separate cover. The SHSP will be reviewed at the initial site safety orientation and by anyone that enters an exclusion zone. Work will be conducted in accordance with the SHSP.

4.2.6 Temporary Facilities and Site Security

The Army will coordinate and approve equipment and material storage and staging areas. Decontamination and waste storage areas will be set up.

Site control requires the establishment of regulated areas and site security. Site controls will be established to protect the public from construction hazards (i.e., heavy equipment and open excavations). To maintain security during non-working hours, the contractor shall secure the site daily prior to leaving. All equipment and supplies will be stored in locked facilities.

Portable toilets and refuse containers will be set up near the work areas. Traffic control devices, such as barricades, cones, delineators, and signage, will be employed as necessary to manage pedestrian and vehicular traffic. Truck traffic between work areas will be set up as one-way looped haul roads.

4.2.7 Marking Planned Excavation Limits

Planned excavation limits will be marked prior to the mobilization of the construction crew and equipment. The initial area of excavation will be field-located using appropriate surveying techniques and/or GPS, and will be in accordance with the findings of the predesign investigation sampling activities. The proposed excavation limits for the remedial action sites are shown on Work Plan (WP) Figures 2-1 through 2-9. Survey activities will be recorded in the Field Activity Daily Log (FADL).

4.2.8 Identification of Underground Structures and Utilities

The location of utilities and other underground structures within and around the planned excavation areas will be determined. The survey will be performed using standard underground utility locating equipment. Detected utilities will be marked on the ground using standard conventions. The utility surveyor will also check utilities drawings, where available, in order to ascertain locations and

depths of the structures. Project personnel will perform a visual reconnaissance to locate and identify all utilities in the vicinity of the work areas.

4.2.9 Clearing and Grubbing

Clearing will be performed as needed at each of the specific work areas established to provide adequate work clearance while limiting impact to vegetation in proximity of the work areas. Vegetation, shrubs, and brush within the clearing limits will be removed. Pickleweed is habitat for the endangered salt marsh mouse and will be removed in accordance with the pickleweed removal plan. The clearing limits will include a 5-foot buffer zone in the pickleweed adjacent to the excavations. The proposed buffer boundaries for specific work areas are provided on the site-specific figures in the WP showing the work.

4.2.10 Water Inflow Prevention

Inflow of water into excavations at each site will be controlled using the following measures:

At each site, plan the fieldwork based on tidal, weather, and existing site conditions; make provisions as necessary, to temporarily dam the Outfall Drainage Ditch (ODD) from both tidal inflow and storm water being pumped from the inboard Perimeter Drainage Ditch (PDD) during work on the ODD. Temporary berms may be placed around high marsh excavations to prevent tidal inflows.

4.2.11 Excavation

Prior to excavation, the ground surface at the location of the planned excavation at each site will be cleared of vegetation, debris, asphalt, and concrete. The soil will be excavated using an excavator, backhoe, front-end loader, and/or vacuum truck based on the size and configuration of the excavation. Excavated soil will be transferred to lined stockpile cells. Final disposition of the soil will be based on laboratory sample analysis. During excavation activities, engineering controls such as silt fencing will be used for silt control as needed. If necessary, the sidewalls of the excavations will be sloped or benched to minimize sloughing and ensure personnel safety. Safety warning signs will be posted.

Water that enters the excavation during high tides or rain will be allowed to drain or will be removed, prior to resuming excavation activities. Residual water will be pumped as necessary from the excavation to a sediment trap inboard that would drain to the PDD.

The excavation will continue at each site until the designed extent of the excavation is reached. In no case will critical structures be disturbed during excavation. Excavation will be conducted as close as possible to permanent

structures while maintaining no less than a 1:1 slope. Personnel and equipment will not enter the excavation or within the zone delineated by a 1.5:1 slope without approval of the Site Safety and Health Officer. Critical structures include roads, pipelines, some utilities, buildings, and poles for overhead power and telephone lines.

4.3 DETAILED PLANS OF THE PROPOSED EXCAVATION AREAS

The figures in the CSM WP detail the excavation activities at each site.

Illustrated on the plans are the sites and sample locations in NAD83, California Zone 3 coordinates. The construction contractor will convert these coordinates into GPS coordinates in order to identify the specific boundaries in the field.

4.4 EXCAVATION PLAN METHODOLOGY FOR SOIL

As noted in the plans, a grading tolerance of 0.2 ft has been added which is considered to be accuracy reasonably achievable in the field. The standard excavation tolerance of 0.2 ft will be utilized for the excavation but over excavation beyond the plus 0.2 ft tolerance may be permitted after consultation with the field representative if it is not practical to grade within the ± 0.2 ft tolerance due to site specific conditions. It has been estimated that the total over excavation should not exceed 20% of the soil calculated.

The contractor will first mark site boundaries with flagging and using GPS instruments and standard surveying methods. The project will then remove surface debris and knock down and remove existing vegetation. A point survey will be conducted to verify vertical elevations prior to excavation for each site. Subsurface organic matter will be excavated along with the identified soil lift. Erosion from work areas into the ditches and bay will be controlled by silt fencing. The excavated soil will be transported to the stockpile areas. Then a post-excavation point over point survey will be done to verify excavation depths.

4.5 SOIL STOCKPILE AREA MANAGEMENT

Containment cells will be constructed to segregate material by type and source and to prevent stormwater runoff from entering the stockpiles. As applicable, materials will remain stockpiled in containment cells until waste characterization is completed and the material is approved for disposal.

Each cell will be constructed from 20-mil high density polyethylene (HDPE) sheeting, or equivalent, placed over and within an area delineated by bermed soil from the borrow pit. Each cell will be large enough to hold 150 percent of the volume of soil and debris anticipated to be excavated from each site. If possible,

the cell will be constructed in an area that allows for water within the cell to drain to a single location within the cell.

At the completion of daily excavation activities, the soil within the stockpile cells will be covered with a 10-mil HDPE, or equivalent, sheet. During and following excavation activities, the stockpile cells will be periodically inspected to ensure that the stockpile cells and covers are in good condition and to observe whether water has separated from the stockpile soil.

Berms will be used to control storm water runoff onto the containment cells. As required, diversion ditches or dikes will be used to control sediment migration. Installed erosion and sediment control measures will be maintained throughout the duration of the project.

Water generated from decontamination procedures will be combined and stored in separate water storage tanks. The storage tanks will be clearly labeled to indicate specific source, type of material, date of containerization, and project contact.

Miscellaneous waste such as construction debris, polyethylene sheeting, and general trash will be stored in dumpsters or rolloff bins. Waste material will be placed in temporary stockpiles and loaded into trucks for transport as soon as possible.

Disposal of any waste that is characterized as a hazardous waste will occur within 90 days of the date that the waste was generated.

5.0 PROJECT FILL REQUIREMENTS

The surface at most of the sites will be restored to conditions similar to pre-construction conditions as follows:

The backfill soil will be obtained from an approved on-site location;

Once the borrow pit is selected and the boundaries flagged, the vegetation will be removed and set aside. Only appropriate grain size material will be used for backfill;

Excavators and off-road dump trucks will be used to deliver and place the backfill soil;

Wooden or metal support mats may be required to support the construction equipment during both excavation and backfill operations;

It is not anticipated that grading and compaction equipment will be used for this operation as a result of the wetness of the existing soil;

No concrete, asphalt, aggregate base, hydroseeding, or re-vegetation work will be performed;

Power pole replacement or relocation will not be performed. Inactive power poles that interfere with the demolition/removal will be removed and disposed of;

As-built documentation of excavations will be based on a survey to be performed by a licensed surveyor and a complete set of survey data will be provided as part of the as-built documentation in the construction completion report; and;

When field activities are completed, the decontamination areas will be removed, and the area will be restored as much as possible to the original conditions. Any waste generated during the project will be disposed of properly.

Boat Dock Site – The excavation will not be backfilled.

Area 14 Site – The excavation shall be backfilled and graded to the general contours of the existing site allowing tidal and rainwaters to drain in the same fashion as before disturbing the site.

Historic Outfall Drainage Ditch – The excavation will not be backfilled.

East Levee Construction Debris Disposal Area – The excavation shall be backfilled and graded to the general contours of the existing site allowing tidal and rainwater to drain in the same fashion as before disturbing the site.

East Levee Burn Pit Area – The excavation shall be backfilled and graded to the general contours of the existing site allowing tidal and rainwater to drain in the same fashion as before disturbing the site.

Former Sewage Treatment Plant Outfall – The excavation shall be backfilled and graded to the general contours of the existing site allowing tidal and rainwater to drain in the same fashion as before disturbing the site.

Outfall Drainage Ditch – The excavation will not be backfilled.

High Marsh Plain– The excavation shall be backfilled and graded to the general contours of the existing site allowing tidal and rainwaters to drain in the same fashion as before disturbing the site, with the exception of the planned HWRP channel cut location. The excavation in the HWRP channel cut location will not be backfilled.

High Marsh Grid – The excavation shall be graded to the general contours of the existing site allowing tidal and rainwaters to drain in the same fashion as before disturbing the site.

6.0 IMPLEMENTATION PLAN

This section describes how the Army will implement this Soil Management Plan (SMP).

6.1 ESTIMATED SCHEDULE

Predesign sampling and excavation activities will be performed during the period from October 2004 through January 31, 2005. These activities include the preparation, submittal, review, and approval of the project plans. Stockpile activities will begin with mobilization in October 2004 and are scheduled to be completed by August 2005. Reporting is to be completed by March 2005.

6.2 QUALITY CONTROL DURING ACTUAL CONSTRUCTION

The construction contractor will submit to the Army a list of documents to ensure quality control and quality assurance during actual construction. A typical example of a list of contractor's submittals is as follows:

Contractor Staff	Identification of all key personnel
Safety Program	Description of the contractor's safety program.
APP/IIPP	Accident Prevention Program/Illness Prevent Program
QC Program	Construction Quality Control Program
EPIP	Environmental Protection Implementation Plan
Excavation Plan	Procedural plan in planning and executing the excavation

The Environmental Protection Implementation Plan (EPIP) is a submittal by the contractor describing how the contractor intends to implement the environmental protection requirements found in the specifications. In general, the plans and specifications (P&S) are written as a performance based-specification. The P&S generally do not specify any procedural steps in order to meet the performance specification. However, the Army does require that the contractor describe how the contract requirements will be implemented and must approve the implementation procedures.

The contractor's EPIP is based on the Army's performance specifications. The contractor must implement these critical requirements and the contractor's EPIP must account for the actual site conditions. The Army approves the EPIP before construction begins.

6.3 QUALITY ASSURANCE DURING ACTUAL CONSTRUCTION

The Army will have personnel present during work to inspect and document activities and adherence to plans.

For this project, the contamination is depth dependent and therefore excavation depth is a quality attribute. The contractor may use laser guided, sonic guided, GPS, or other instrumentation to control the depth of excavation. There is a wide variety of contractor's instrumentation available to control the excavation depth and some of these instrumentations are described in "Grading & Excavation Contractor" magazine or at www.gradingandexcavation.com. The Army will not specify which type of quality control devices to use since each contractor uses different types. The Army will primarily focus on quality assurance rather than quality control.

The contractor will conduct pre-construction and post excavation topographic surveys as the primary quality assurance methodology. Topographic surveys are more practical and efficient during a construction project of this nature and are described in the next section.

6.4 QUALITY ASSURANCE USING CONFIRMATIONAL SURVEYS

The contractor will survey points for each excavation. The topographic surveys will be taken prior to excavation and again after excavation to determine the actual depth of excavation. All survey data will be recorded and certified by a California licensed surveyor. The survey for each site will be the QA documentation and provides certification that the minimum excavation depth was achieved.

For odd shaped sites, which are not square or rectangular, the Army will rely on the licensed surveyor's judgment and experience to layout the survey point distribution for the odd shaped sectors.

6.5 AS-BUILT DRAWINGS AND POST-CONSTRUCTION REPORT

To document the removal of soil, as-built drawings will be prepared. The as-built drawings shall illustrate the as-built condition of the sites. A Post-Construction report will be prepared and will consist of:

1. Pre-existing site drawings
2. As-built drawing
4. Topographic pre-excavation elevation survey
5. Topographic post-excavation elevation survey

6.6 STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

Task 17 (page 16) of the Board Order R2-2003-0076 (SCR for Hamilton Army Airfield) states the following requirement:

"For each proposed development greater than 1 acre in size, the dischargers shall submit a Notice of Intent to the State Water Resources Control Board

(SWRCB), prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) acceptable to the Executive Officer, and implement Best Management Practices (BMPs) for the control of storm water, in accordance with the requirements specified in the State Water Resources Control Board General Permit for Storm Water Discharges Associated with Construction Activities (NPDES Permit No CAS000002)."

The compliance date in the SCR is prior to October 15 or at least 60 days prior to the date of the Intent to Construct. The Army met this requirement by submitting the NOI to the SWRCB in early March.

The guidance document that will be used to develop the SWPPP will be the Erosion and Sediment Control Field Manual (3rd edition, July 1999) issued by the San Francisco RWQCB. The purpose of the SWPPP is to identify the erosion and sedimentation controls for the site. The SWPPP will identify the sedimentation and erosion control measures that will be necessary to prevent a sediment discharge and will include color-coded maps detailing the location of the sedimentation and erosion control measures.

A comprehensive SWPPP is presented in Appendix A of the work plan.

7.0 REQUEST FOR EXECUTIVE OFFICER'S ACCEPTANCE

This Soil Management Plan (SMP) identifies the details of the US Army BRAC program's construction phase on the Hamilton Project, which will remove contaminated soils in the Coastal Salt Marsh.

Acceptance of this SMP by the Executive Officer will allow the Army to comply with the requirements stated in Board Order R2-2003-0076, meet the performance criteria described in the ROD/RAP, and proceed in reducing the risk to the environment.

The Army request that this SMP be accepted by the Executive Officer within 30 calendar days after receipt in order to meet the project schedule. This will allow the Army to continue development of the plans and specifications associated with the SMP and award the construction contract.